PIONEER®
The Art of Entertainment

Service Manual

● KEH-P9200RDS/EW

ORDER NO.
CRT1638

MULTI-CD/DSP CONTROL FM/MW/LW TUNER DECK AMPLIFIER

KEH-P9200RDS EW

NOTE:

- **Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.**
- **See the separate manual CX-631 (CRT1640) for the cassette mechanism description.**
- **The cassette mechanism employed in this model is one of 「X-2L」 mechanism series.**

CONTENTS

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436

● Service Precautions

1. This device employs an inverter as the power supply for the EL. The inverter has an output voltage reach approximately 300 Vrms (AC), under no-load condition and about 160 Vrms (AC), with the EL connected. Utmost cars should be used not to suffer from a possible electric shock, accordingly.

1. DISASSEMBLY

● Removing the Case(not shown)

1. Insert and turn a flat screwdriver to remove the case.
2. Raise the case to remove.

● Removing the Cassette Mechanism Module (not shown)

1. Remove the four screws.
2. Disconnect the connector.
3. Remove the cassette mechanism module.

● Removing the Detach Grille Assy(not shown)

1. Press the detach button.
2. Press the button and then remove the detach grille assy.

● Removing the Panel Assy

1. Remove the two screws, and disconnect the two connectors.
2. Disengage the stoppers at four locations indicated by arrows.
3. Remove the panel assy.

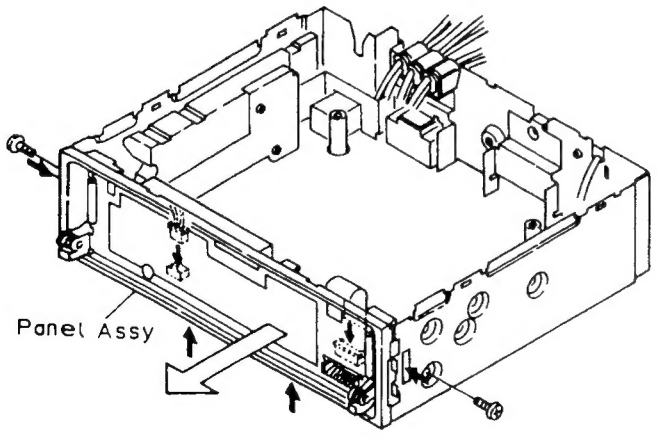


Fig.1

● Removing the Tuner Amp Unit

1. Remove the six screws A.
2. Remove the screw B and then remove the holder.
3. Unbend the tabs at three locations indicated by arrows until straight.
4. Raise up on tuner amp unit to remove it from chassis unit.

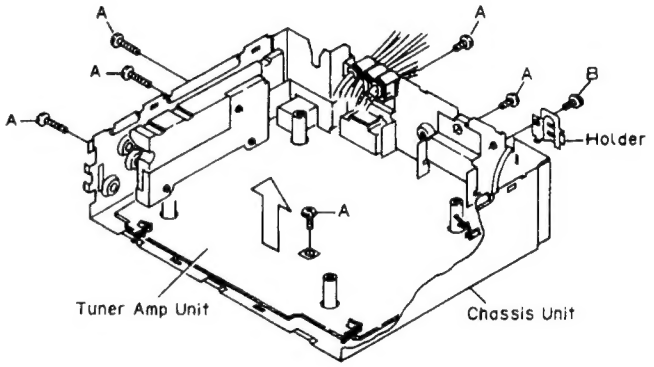


Fig.2

2. ADJUSTMENT

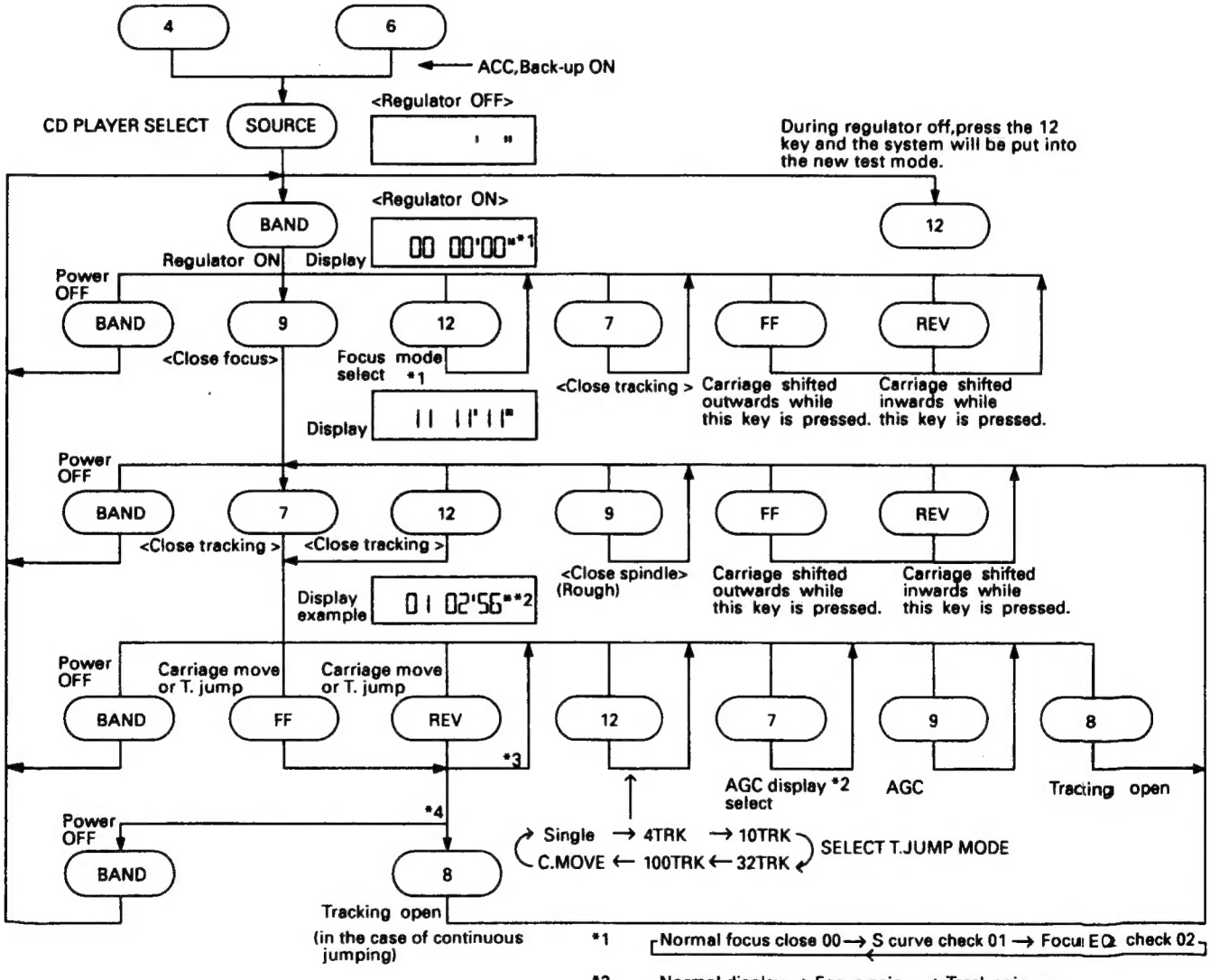
2.1 CD ADJUSTMENT

● Test Mode

Test mode is mainly used adjustment of IP BUS type CD multi players.(Such as CDX-P610)

- Switching to test mode
  While pressing the 4, 6 keys together, switch the back up and ACC ON.
- Canceling test mode
  Switch the back up and ACC off.
- SINGLE/10TRK/32TRK will continue to operate even after the key is released.Tracking closed the moment C-MOVE is released.
- JUMP MODE resets to SINGLE as soon as power is switched off.

● Flow Chart



● Indicating An Error Number

If the CD should fail to operate in CD multi player or if an error has taken place during the operation and resulted in an error, the player will enter into the error mode. And the cause of such error is numerically indicated.
This is armed at assisting an analysis or repair.

(1) Basic Means of Display

- With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitted by the use of MIN and SEC. Identical date are transmitted with MIN and SEC.
- Examples of Display ERROR-XX

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position →Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed →Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable →Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed →Defects, disc upside-down, severe vibration
30	ELECTRIC	Search time out	Failed to reach target address →Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal
50	MECHANISM	An error upon ejection	MAG switch release time has time out Elevation time out when eject
60	MECHANISM	An error while putting in and out the tray	Tray in / out time has time out Tray is caught when put in
70	MECHANISM	An error upon elevation	Elevation time has time out
80	MECHANISM	An error with an empty magazine inserted	No disc is available

* Setup means a series of operations after focusing up to sound output.

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number)
During the setup, the CD software operation status (internal RAM and C-point)is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 3.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND	Regulator ON	Regulator OFF	—	Time of occurrence / cause of error select
FF	—	FWD-Kick	TRACK UP / FF	—
REV	—	REV-Kick	TRACK DOWN /REV	—
7	—	Tracking close	RPT	—
8	—	Tracking open	RANDOM	—
9	—	Focus close	ITS	—
12	To New Test Mode	Focus Mode Select	PAUSE	—

Operations, such as EJECT, CD ON/OFF, etc. are performed normally

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause	Detail
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 150ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, home switch failed
03	Carriage moving outwards	10-second time out, home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15,16,17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC Subcode waiting	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, failure to lock, failed to read subcode

(5) Example of Display.

• SET UP in progress

• Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

• Protection/Error upon occurrence

(a) Error number indicated

Select the display with the BAND key.

(b) Track number and absolute time indicated

2.2 TUNER/AUDIO ADJUSTMENT

● Connection Diagram

NOTE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

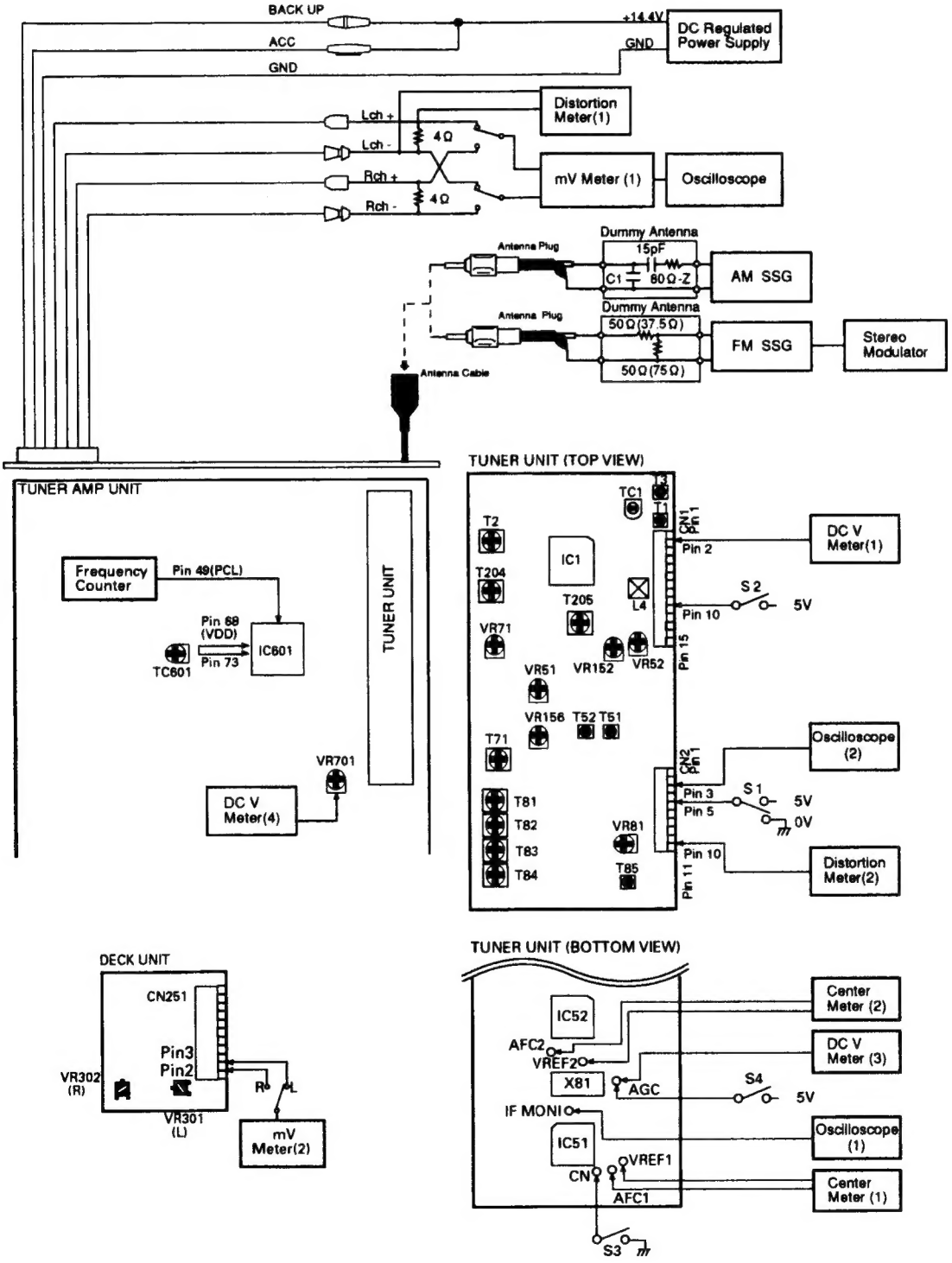


Fig.3

MW/LW ADJUSTMENT

	No.	AM SSG(400Hz,30%)		Displayed	Adjustment	Adjustment Method
		Frequency(kHz)	Level(dBμV)	Frequency(kHz)	Point	(Switch Position)
IF	1	999	20	999	T204,T205	mV Meter(1) : Maximum

FM ADJUSTMENT(KEH-P9200RDS/EW, X1BEW)

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	·····	·····	108.0	L4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T85	Center Meter(1) : 0 (S1:0V)
	2	98.1 M	65	98.1	T51	Center Meter(2) : 0 (S1:0V)
	3	98.1 M	65	98.1	T52	Distortion Meter(2) : Minimum (S1:0V)
	4	Repeat No.2–3 alternately so that the center meter indicates the 0 output and distortion meter indicates the minimum output.				
ANT,RF	1	106.1 M	5–15	106.1	TC1	mV Meter(1) : Maximum (S1:0V)
	2	89.9 M	5–15	89.9	T1,T3	
	3	Repeat No.1–2 alternately so that the mv meter indicates the maximum output.				
IMAGE	1	129.3 M	70–90	107.9	TC1	mV Meter(1) : Minimum (S1:0V)
IFT	1	98.1 M	5–15	98.1	T2	mV Meter(1) : Maximum (S1:0V)
IHF	1	98.1 M	13	98.1	T71	mV Meter(1) : Maximum (S1:0V)
Max Sep	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum (S1:0V)
ST,THD	1	98.1 S	65	98.1	T71	mV Meter(1) : Minimum (S1:0V)
Max Sep	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum (S1:0V)
Dynas Filter	1	98.1 M	50	98.1	T83,T84	Oscilloscope(1) : Maximum (S1:5V) (S3:ON) (S4:5V)
	2	118.1 M	50	118.1	T81	
	3	78.1 M	50	78.1	T82	
IF Gain	1	98.1 M	14	98.1	VR71	DC V Meter(3) : 4V±0.1V S1:0V(Gnd),S2:0V(OFF), S3:0V(ON),S4:0V(OFF)
Soft Mute	1	98.1 M	65	98.1	·····	mV Meter(1) : A(0dB)(STEREO MODE)
	2	98.1 M	15	98.1	VR81	mV Meter(1) : A-3dB
ARC	1	98.1 S	40	98.1	VR52	mV Meter(1) : Separation 5dB±3dB (STEREO MODE)
SD	1	98.1 S	22	98.1	VR51	Oscilloscope(2) : Approx. 3V (S2:5V)

FM ADJUSTMENT(KEH-P8200RDS/EW, X1BEW, KEX-P820RDS/EW)

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S :STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	·····	·····	108.0	L4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter(2) : 0 (S1:0V)
	2	98.1 M	65	98.1	T52	Distortion Meter(1) : Minimum (S1:0V)
	3	Repeat No.1–2 alternately so that the center meter indicates the 0 output and distortion meter indicates the minimum output.				
ANT,RF	1	106.1 M	5–15	106.1	TC1	mV Meter(1) : Maximum (S1:0V)
	2	89.9 M	5–15	89.9	T1,T3	
	3	Repeat No.1–2 alternately so that the mv meter indicates the maximum output.				
IMAGE	1	129.3 M	70–90	107.9	TC1	mV Meter(1) : Minimum (S1:0V)
IFT	1	98.1 M	5–15	98.1	T2	mV Meter(1) : Maximum (S1:0V)
IHF	1	98.1 M	13	98.1	T71	mV Meter(1) : Maximum (S1:0V)
Max Sep	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum (S1:0V)
ST,THD	1	98.1 S	65	98.1	T71	mV Meter(1) : Minimum (S1:0V)
Max Sep	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum (S1:0V)
Soft Mute	1	98.1 M	65	98.1	·····	mV Meter(1) : A(0dB)(STEREO MODE)
	2	98.1 M	15	98.1	VR156	mV Meter(1) : A-3dB
ARC	1	98.1 S	40	98.1	VR52	mV Meter(1) : Separation 5dB±3dB (STEREO MODE)
SD	1	98.1 S	22	98.1	VR51	Oscilloscope(2) : Approx. 3V(S2:5V)

CLOCK ADJUSTMENT

No.	Adjustment Point	Adjustment Method Point
1		Pin73 of IC601 connect to 5V
2	TC601	Frequency Counter : 1.048576MHz±2Hz

RDS SL ADJUSTMENT

No.	FM SSG		Displayed	Adjustment	Adjustment Method
	Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
1	98.1 S	45	98.1	VR701	DC V Meter(4) : 1.75V±0.05V

DOLBY B/C NR ADJUSTMENT

No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : –6.0dBs+1.5dB –0.5dB (DOLBY NR Switch : OFF)

● ICs

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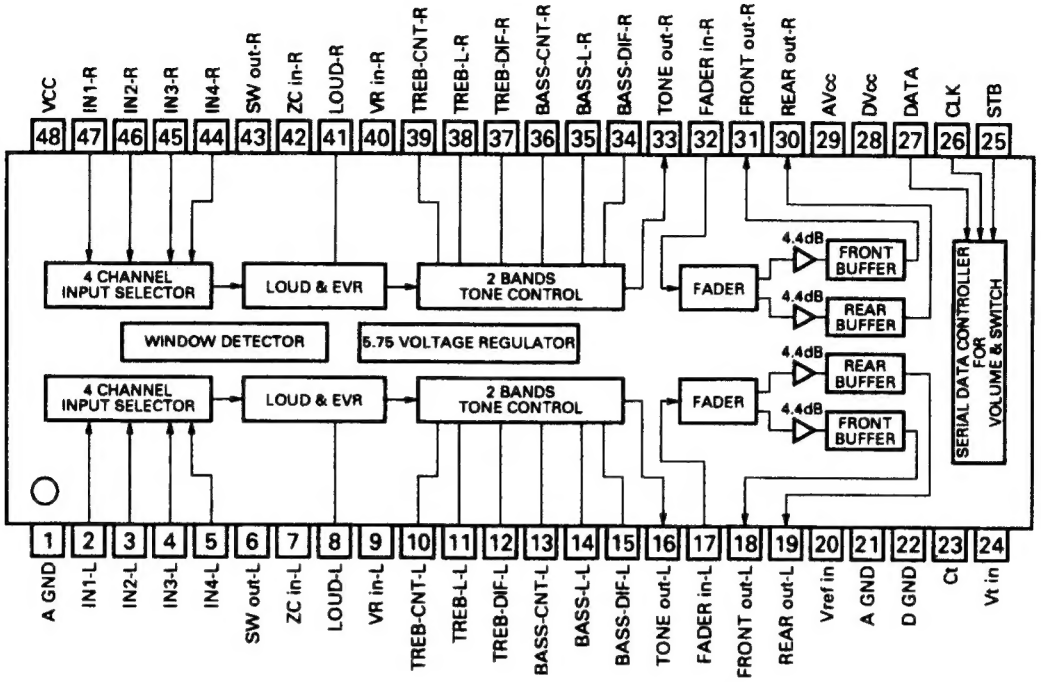

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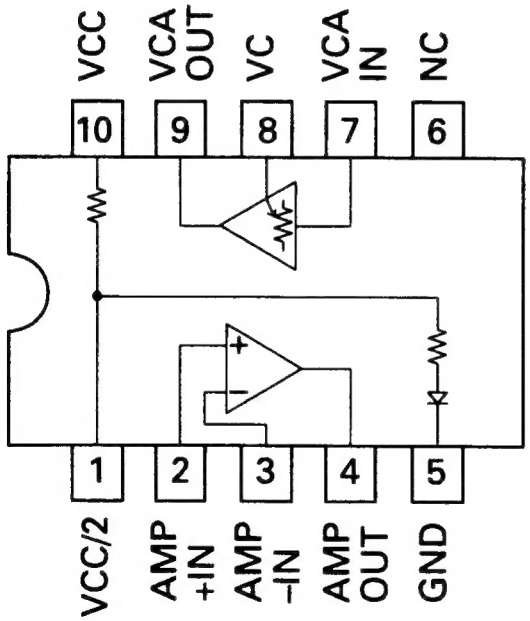

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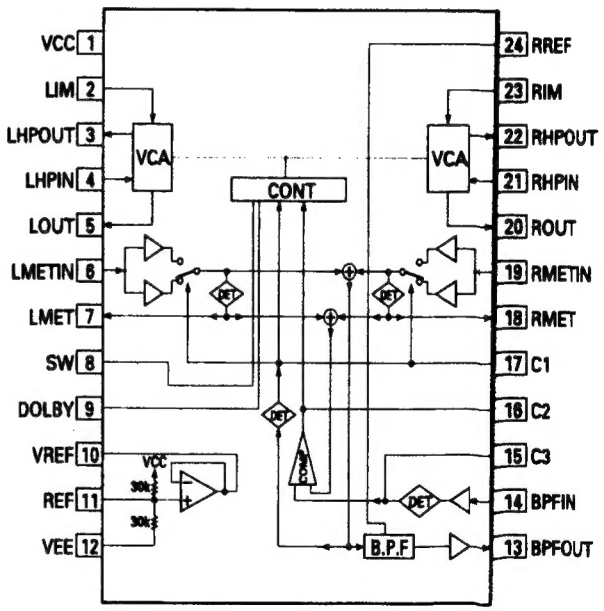


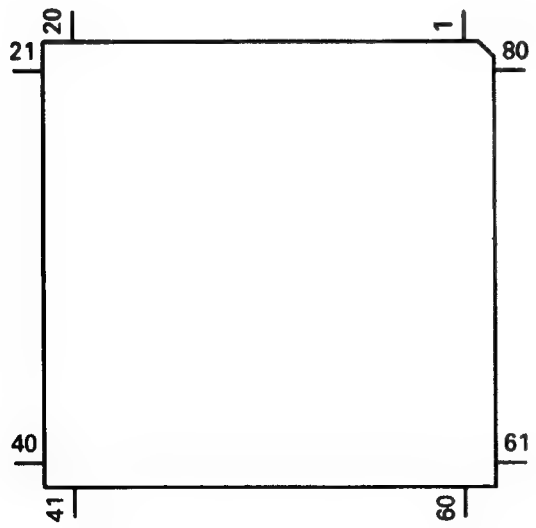
● **Pin Functions(PDR019B)**

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1	$\overline{\text{RIDRST}}$	O	C	RDS reset output
2	RIDSEL	O	C	RDS select output
3	NC			Open
4	AVSS			A/D converter GND
5	RIDRDY	I		RDS ready input
6	VCAVOL	O	C	VCAVOL analog output(D/A)
7	AVREF1	I		D/A converter reference voltage input
8	KYDT	I		Grille microcomputer communication data input
9	DPDT	O	C	Grille microcomputer communication data output
10	SWVDD	O	C	Grille microcomputer power supply output
11	RIDDI	I		RDS communication data input
12	RIDDO	O	C	RDS communication data output
13	$\overline{\text{RIDCK}}$	O	C	RDS communication clock output
14	MSIN	I		MS sense
15	$\overline{\text{MTLSW}}$	I		Metal switch sense
16	POS(TSI)	I		Position sense(Test P data input)
17	RES(TSO)	I		Reverse reel sense(Test P data output)
18	NES(TCK)	I		Normal reel sense(Test P clock output)
19	DIRO	O	C	Head N/R select output
20	PLAY	O	C	MS gain select output
21	DLBYBC	O	C	Dolby B/C NR select output
22	NR	O	C	Noise redaction output
23	SC2	O	C	Submotor control 2
24	SC1	O	C	Submotor control 1
25	CM	O	C	Capstan motor control
26	$\overline{\text{STBY}}$	O	C	Drive IC control
27	LOADSW	I		Loading switch sense
28	FLEX	O	C	Tune-up IC control
29	PDI	I		PLL data input
30	PCK	O	C	PLL clock output
31	PDO	O	C	PLL data output
32	PCE	O	C	PLL chip enable output
33	VSS			GND
34	MONO	O	C	Forced monaural output
35	$\overline{\text{AM/FM}}$	O	C	$\overline{\text{AM/FM}}$ select output
36	NCB	O	NH	DYNAS filter select output
37	SUBW0	O	NH	Subwoofer control 0
38	SUBW1	O	NH	Subwoofer control 1
39	NC			Open
40	TUNPW	O	C	Tuner power output
41	ASENBO	O	C	Slave power supply control
42	$\overline{\text{BUSMUTE}}$	O	C	BUS mute output
43	$\overline{\text{TMUTE}}$	O	C	Tuner mute output
44	$\overline{\text{DMUTE}}$	O	C	Deck mute output
45	PEE	O	C	Beep tone output
46	$\overline{\text{MUTE}}$	O	C	mute output
47	SYSPW	O	C	System power control
48	ANTFIX	O	C	FM diversity select output
49	PCL	O	C	Output for clock adjustment
50	LCDPW	O	C	LCD backlight power supply output
51	DIM	O	C	DIMMER select output
52	ILMPW	O	C	Illumination power supply output
53	$\overline{\text{CSENS}}$	I		Flap close sense
54	$\overline{\text{ISENS}}$	I		Illumination sense
55	PRSBSW	I		$\overline{\text{PREOUT}}$/SUBWOOFER select input
56	TX	O	C	IP-BUS data output
57	RX	I		IP-BUS data input

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
58	$\overline{IPPW}$	O	C	IP-BUS driver Power supply control
59	SD	I		SD input
60	$\overline{RESET}$	I		System reset input
61	TELIN	I		TEL mute input
62	$\overline{BSENS}$	I		Back up sense
63	$\overline{ASENS}$	I		ACC sense
64	$\overline{DSENS}$	I		Detach sense
65	VST	O	C	E.VOL strobe output
66	VDT	I		E.VOL data input
67	VCK	O	C	E.VOL clock output
68	VDD			Power supply
69	X2			Main system clock connection
70	X1			Main system clock connection
71	IC(VPP)			GND
72	XT2			
73	TESTIN	I		Test program input
74	AVDD			A/D converter analog power supply
75	AVREF0	I		A/D converter reference voltage input
76	SL	I		Signal level input(A/D)
77	SEL0	I		Input 0 for destination discrimination
78	SEL1	I		Input 1 for destination discrimination
79	LEVL	I		Audio Lch level input(A/D)
80	LEVR	I		Audio Rch level input(A/D)

I/O Format	Meaning
C	C MOS
NH	High resistivity N channel open drain

*PDR019B



IC's marked by are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

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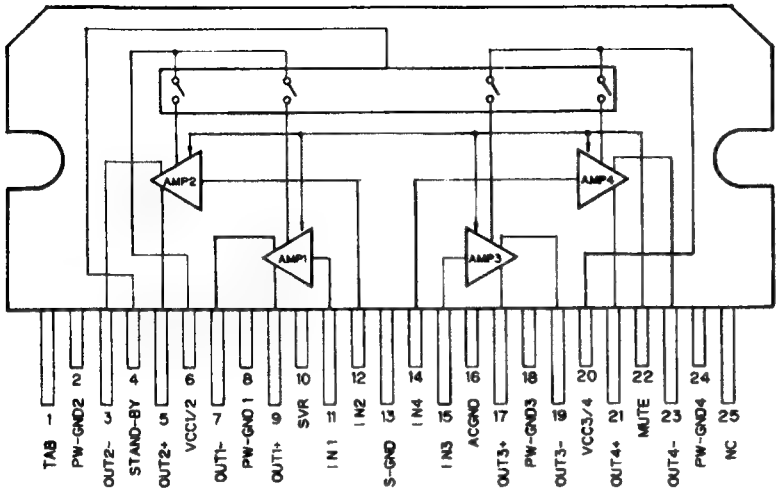

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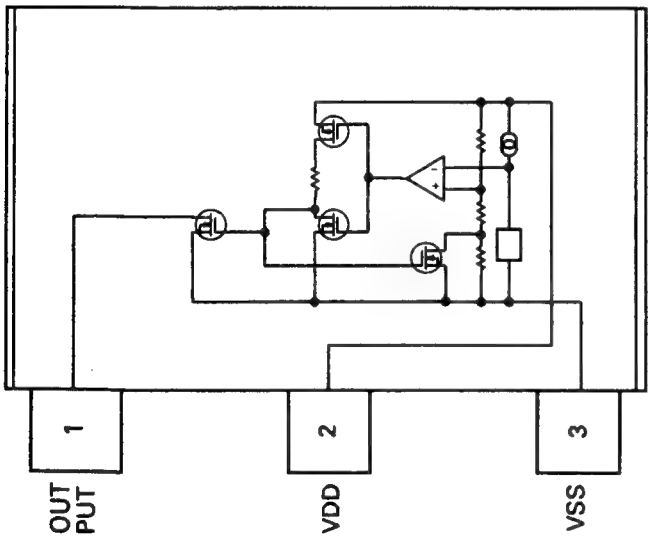

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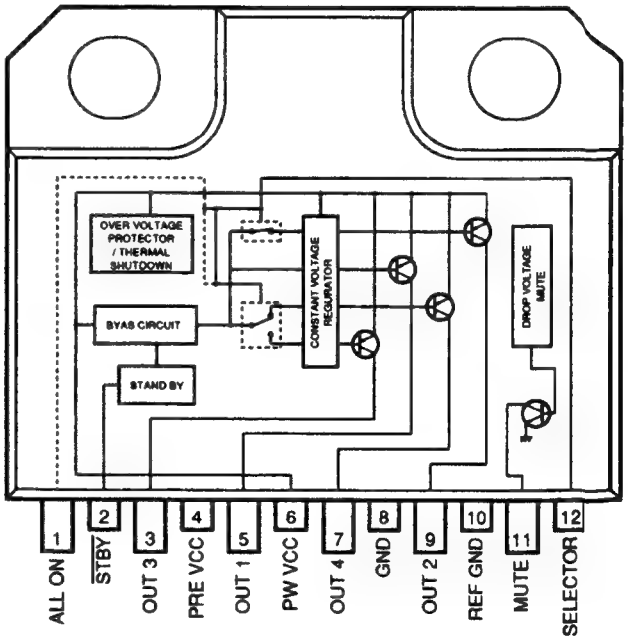
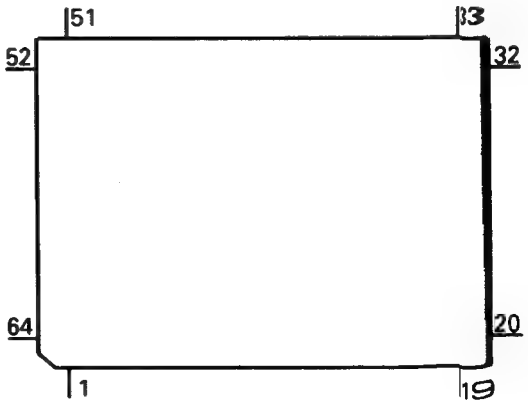


● **Pin Functions(PD6147A)**

Pin No.	Pin Name	I/O	I/O Format	Function and Operation
1–3	NC			Not used
4	SLIN	I		Signal level input
5	NL	I		Noise level input
6	FL	I		Filter mode input
7	$\overline{DK}$	I		DK signal input
8	NCB	O	N	Filter fix output
9–11	NC			Not used
12	AVCC			Analog power supply
13	AVR			5V power supply
14	AVSS			GND
15	RISEL	I		Select input
16	RCK	I		RDS demodulation clock input
17	RDT	I		RDS demodulation data input
18	$\overline{RDSLK}$	I		RDS LK signal input
19	$\overline{SK}$	I		SK signal input
20	RIRST1	I		Reset input
21	MOD0			GND
22	MOD1			GND
23	XIN	I		Crystal oscillating element connection pin
24	XOUT	O	C	Crystal oscillating element connection pin
25	VSS			GND
26	$\overline{DRST}$	O	C	Decoder reset output
27	LS		C	Sensitivity of noise level select
28	NC			Not used
29	RECIVE	O	C	During RDS data reception output
30–49	NC			Not used
50	VSS			GND
51	RITEST	I		Test terminal
52	$\overline{RICK}$	I		Communication clock input
53	RIDI	O	C	Communication data output
54	RIDO	I		Communication data input
55	RIRDY	O	C	Communication ready output
56	CNTSEL			GND
57	VCC			5V
58	SD	I		SD signal input
59	MDSENS	I		Modulation detect input
60–64	NC			Not used

I/O Format	Meaning
C	C MOS
N	N channel open drain

*PD6147A



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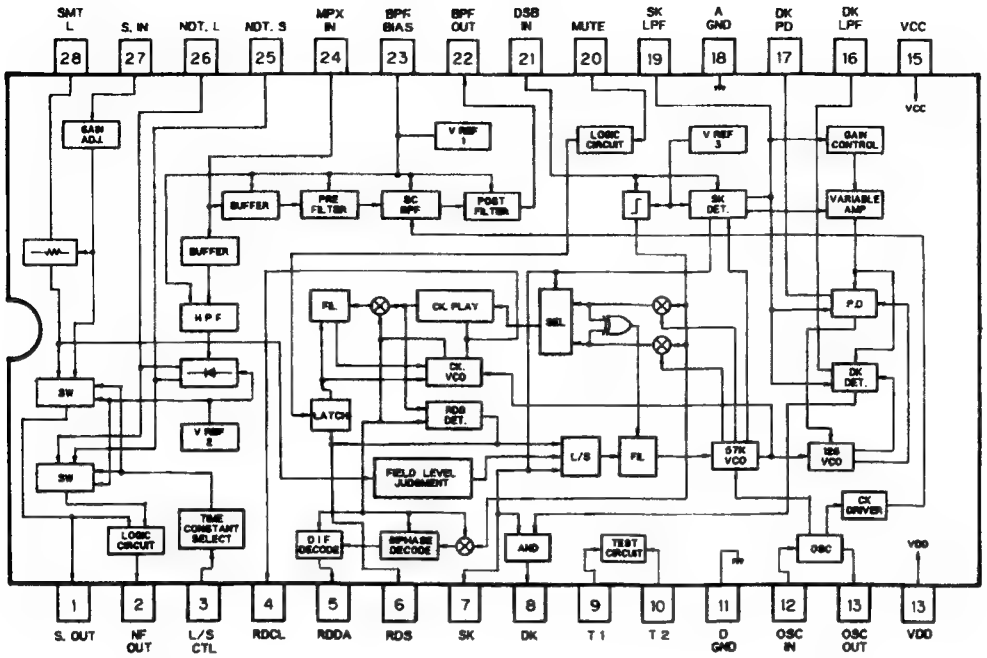
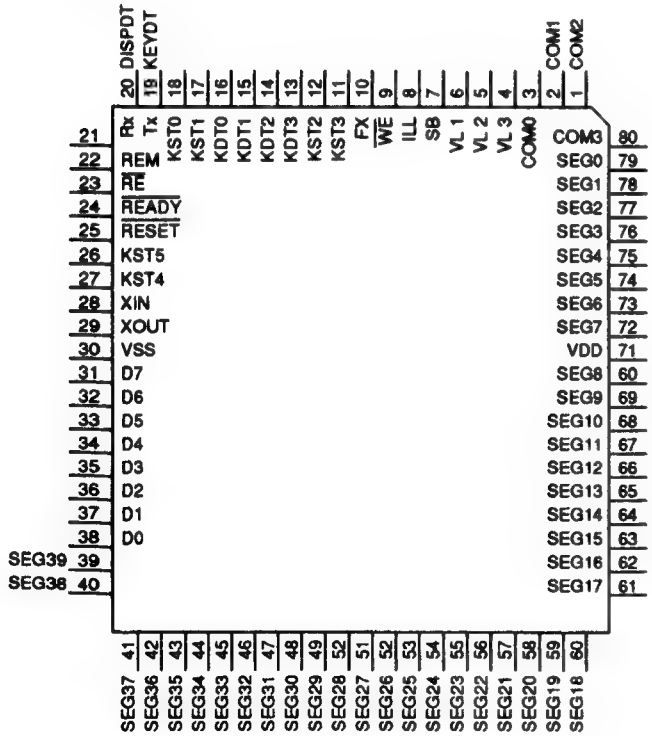
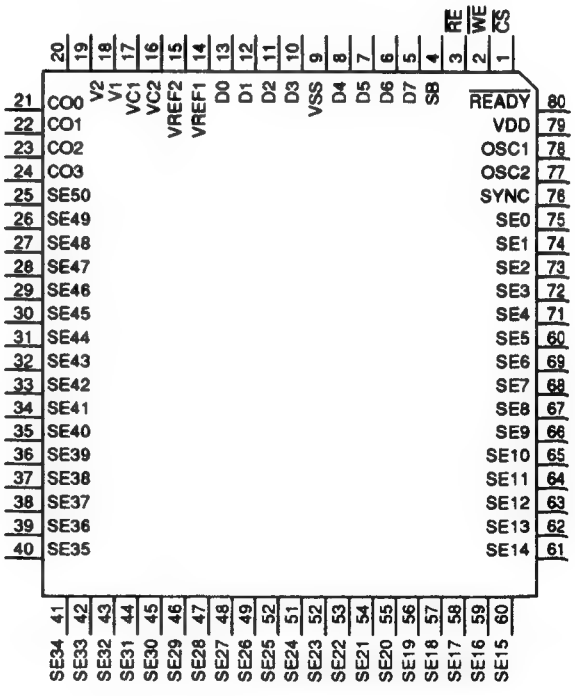


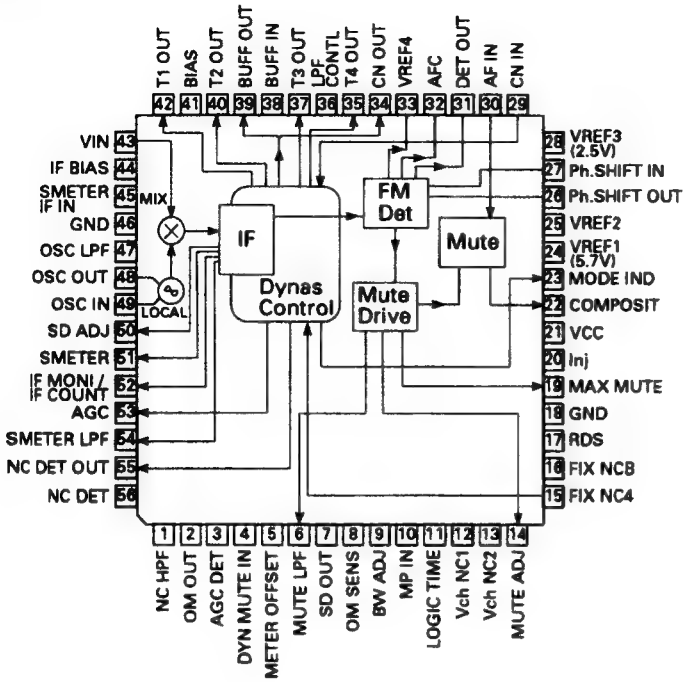
*PD5273A



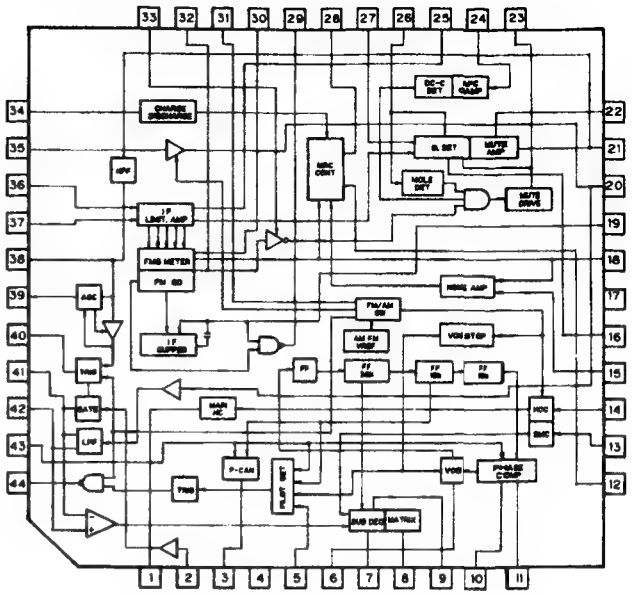
*HD61602RH



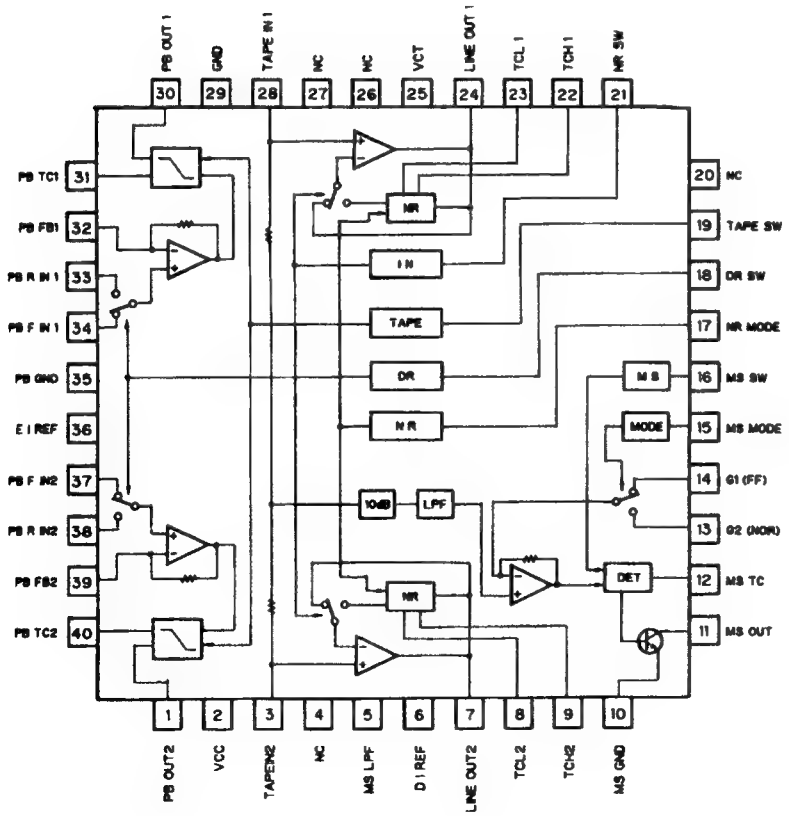
HA12186F



LA1868M-PA



CXA1911Q



3. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

=====Circuit Symbol & No. Part Name=====	Part No.
Unit Number : CWM4038	
Unit Name : Tuner Amp Unit(KEH-P9200RDS/EW, X1BEW)	
MISCELLANEOUS	
IC 401	SN761025DL
IC 402 801 802	TC4066BF
IC 403	M5282FP
IC 404	NJM2068MD
IC 405	TC4052BF
IC 406	PA0059AM
IC 407	NJM2068MD
IC 408	TA2050S
IC 501	LC72140M
IC 551	PAL003A
IC 601	PDR019B
IC 602	PA0051AM
IC 603	S-80734ANDYI
IC 604	PA2024A
IC 605	PML001A
IC 701	PD6147A
IC 702	PMR001B
IC 703	NJM2903M
IC 704	SC14SU69F
IC 803 804 805 806	NJM4558MD
Q 401 402 805 806 807 808	2SC2712
Q 403 404	DTC143TK
Q 405 406 410 504 507 508 602 604 607 619	2SC2712
Q 407 408	DTC314TK
Q 409	DTC114TK
Q 411 610 707	2SA1162
Q 501	2SC3098
Q 502 605	2SC3295
Q 503 506	2SK208
Q 505 551 552 613 702	DTC124EK
Q 601	2SD1189
Q 603 612 617 701	2SA1162
Q 606	2SB1243
Q 608	2SC3295
Q 609 611	DTC114EK
Q 614	DTC124EK
Q 615	DTA114EK
Q 618	2SD1760F5
Q 620 703 704 705 706	2SC2712
Q 621 622	DTA124EK
Q 623 624 632	DTC144EK
Q 625 626 627 628	DTA124EK
Q 630	2SC2712
Q 633	DTC144EK
Q 708	DTC124EK

=====Circuit Symbol & No. Part Name=====	Part No.
Q 801 802 803 804	2SC4213
Q 809 810 811 812	DTC314TK
Q 813 814 815 816	DTC314TK
D 401 505 506 614	MA151K-MH
D 402 601 604 613 627	MA153-MC
D 501	MA3027H
D 502	MA3027H
D 503	MA151WA-MN
D 504 612 615 617	MA151WK-MT
D 602 603 605 606 607	MA153-MC
D 608 620 621 622 626	ERA15-02VH
D 609	MA3062M
D 610	MA3047M
D 611 624	MA3082L
D 623	MA3056M
D 625	MA3075H
D 628	MA151K-MH
D 629	MA151WK-MT
D 701	MA3047M
D 801 802 803 804	MA8180M
L 501 601 602 603 604 605 Ferri-Inductor	LAU2R2K
L 502 Ferri-Inductor 100 μH	CTF-157
L 505 Inductor	LCTB4R7K1125
L 506 Coil	LCTBR10K1125
L 701 702 Ferri-Inductor	LAU101K
L 801 802 804 Inductor	LCTB2R2K1125
L 803 Inductor	LCTB2R2K1125
TC 601 Trimmer	CCG-070
X 501 Crystal Resonator 7.200MHz	CSS1030
X 601 Ceramic Resonator 6.291456MHz	CSS1303
X 701 Crystal Resonator 4.332MHz	CSS1056
S 602 Switch	CSG1020
S 603 Switch	HSH-156
IL 601 Lamp 40mA/14V	CEL1263
VR 701 Volume 2.2kΩ(B)	VRMB6VS222
FU 601 IC Protector 0.4A	ICP-N10
Tuner Unit	CWE1356
EF 601 EMI Filter	CCG1006
BZ 601 Buzzer	CPV1011
RESISTORS	
R 401 402	RS1/16S75J
R 403 404	RS1/16S36J
R 405 406 415 416	RS1/16S27J
R 409 410 445 446	RS1/16S51J
R 417 418	RS1/16S15J
R 419 420	RS1/16S10J
R 427 428	RS1/16S47J
R 429 430 463 465 466 467 491 629 706 726	RS1/16S10J
R 431 432 817 818 819	RS1/16S15J
R 433 434 503	RS1/16S82J

=====Circuit Symbol & No. Part Name=====											Part No.
R	435	436	437	438	453	454	476	508	618	620	RS1/16S223J
R	439	440	502	709							RS1/16S332J
R	441										RS1/16S751J
R	442										RS1/16S751J
R	443	444	455	456	514	515	520	521	522	523	RS1/16S102J
R	447	448									RS1/16S122J
R	449	450									RS1/16S392J
R	451	452									RS1/16S181J
R	457	458									RS1/16S911J
R	459	460	702								RS1/16S392J
R	461										RS1/16S220J
R	462										RS1/16S334J
R	464										RS1/16S564J
R	468	469	470	489	490	615	616				RS1/16S104J
R	471										RS1/16S105J
R	472	473	718								RS1/16S103J
R	474	517	536	540	543	608	614	619	624	625	RS1/16S472J
R	475										RS1/16S563J
R	477										RA3C472J
R	480										RS1/16S103J
R	481	482	510	518	551	553	554	633	634	657	RS1/16S103J
R	483	484	705	825	826	827	828				RS1/16S224J
R	485	486	545								RS1/16S273J
R	492										RS1/16S473J
R	501	658	659	668							RS1/16S101J
R	504	721									RS1/16S331J
R	505										RS1/16S330J
R	506										RS1/16S680J
R	507	512	632	743							RS1/16S222J
R	509										RS1/16S221J
R	511	527	528	617	622	623	653	744			RS1/16S222J
R	516										RS1/16S152J
R	524	525	542	610	612	613	649	650	688	704	RS1/16S102J
R	529	530	541	605	607	651	652	670	671		RS1/16S473J
R	531	538	539	637	665	680					RS1/16S473J
R	532	642									RA4C222J
R	537										RS1/16S222J
R	546										RS1/16S183J
R	547	548	606								RS1/16S683J
R	549	550									RS1/16S912J
R	552	722									RS1/16S331J
R	555	646	679								RS1/16S0R0J
R	557										RS1/16S0R0J
R	602										RS1/16S473J
R	603										RS1/16S473J
R	611										RS1/16S124J
R	626	627	630	635	681	682	854				RS1/16S472J
R	631										RS1/2S681J
R	636										RS1/16S473J
R	638										RS1/4S681J
R	639										RS2P6R8JL
R	640	641									RA3C473J
R	643	644									RA3C222J
R	645	733									RA4C681J
R	647										RS1/16S102J
R	648	664									RS1/16S102J
R	656										RS1/16S182J
R	660										RS1/16S620J
R	661										RS1/16S183J
R	662	663	669	677	829	830	831	832	833		RS1/16S472J
R	667	678	719								RS1/16S103J
R	672	674	720	723	724						RS1/16S223J
R	673	675	687	725	727	732	739	740	782	783	RS1/16S473J
R	684	685									RS1/16S103J
R	686										RS1/16S473J

=====Circuit Symbol & No. Part Name=====											Part No.
R	689										RS1/16S224J
R	690										RS1/16S204J
R	692										RS1/16S362J
R	693										RS1/16S222J
R	701	805	806	807	808	813	814	815	816		RS1/16S223J
R	703										RS1/4S620J
R	707	716	728	741	742						RS1/16S102J
R	708										RS1/16S152J
R	710	713									RA3C102J
R	717										RS1/16S683J
R	729										RS1/16S683J
R	730										RS1/16S222J
R	731										RS1/16S105J
R	737	738									RS1/16S681J
R	784	785									RS1/16S473J
R	788										RS1/16S473J
R	820										RS1/16S154J
R	821	822									RS1/16S114J
R	823	824									RS1/16S114J
R	834	835	836	853							RS1/16S472J
R	841	842	843	844							RS1/16S334J
R	845	847									RS1/16S271J
R	846	848									RS1/16S271J
R	855										RS1/10S220J
R	859	860	861	862							RS1/16S104J
R	864										RS1/16S222J

CAPACITORS

C	401	402	403	404	411	412	447	448	449	450	CEA010M50LL
C	405	406	445	469	477	480	483	561	623		CKSQYB104K16
C	407	408	413	414	429	430	458				CEA100M10NPLL
C	409	410	465								CKSQYB822K50
C	415	416									CKSQYB152K50
C	417	418									CKSQYB183K25
C	419	420	616	817	818	819	820				CKSQYB102K50
C	421	422	529	530							CEA2R2M35NPLL
C	423	424									CKSQYB333K50
C	425	426	503	524	525	601	605	611	612		CCSQCH101J50
C	427	428	453	454	457	475	476	481			CEA100M16LL
C	431	432	437	438	473	515	602	831	832	833	CEA4R7M35LL
C	433	434	502	505	507	512	513	521	522	526	CKSQYB103K25
C	435	436									CEA4R7M16NPLL
C	439	440									CKSQYB222K50
C	441	442	482	606	720	821	822	823	824		CEA2R2M50LL
C	443	444	609	622	706						CKSQYB102K50
C	446	493	494								CKSQYB104K16
C	451	452									CEA100M10NPLL
C	455	456									CCSQCH080D50
C	459										CCSQCH220J50
C	460										CKSQYB273K50
C	461	625									CKSQYB473K50
C	462	464	520	704	708	719					CKSQYB223K50
C	463										CKSQYB153K50
C	466										CEA220M10LL
C	467										CSZA100M16
C	468	472	478	510	619	825					CEA101M10LL
C	470	479	628								CEA470M10LL
C	471	559	564	621							CEA010M50LL
C	474										CEA010M50NPLL
C	484										CKSQYB103K25
C	485										CEA3R3M50LL
C	495										CKSQYB224K16
C	501										CKSQYB681K50
C	504	632	809	810	811	812					CCSQCH101J50
C	506				4.7 μF/16V						CCH 1005
C	508	607	608								CEAR47M50LL
C	509				0.047 μF/16V						CCG 1008
C	511										CFTNA474J50

=====Circuit Symbol & No. Part Name=====	Part No.
C 514 615	CKSQYB102K50
C 516 517	CCSQCH270J50
C 518	CKSQYB102K50
C 523 565	CKSQYB104K16
C 527	CKSYF224Z25
C 528	CKSQYB183K25
C 531 641 726	CKSQYB102K50
C 551 552 553 554	CEAR22M50NPLL
C 560	CEA220M16LL
C 562	CEHAQ472M16
C 563	CEA330M10LL
C 603	CCSQCH330J50
C 604	CCSQCH120J50
C 610 713 716 718	CEA100M16LL
C 613	CKSQYB103K25
C 614	CEAS471M10
C 617 330μF/10V	CCH1181
C 618 620	CEAS470M10
C 626	CEHAQ102M16
C 627 805 807	CKSQYB103K25
C 631 633 634 635	CCSQCH101J50
C 636	CKSYF105Z16
C 642 643 644	CKSQYB102K50
C 647	CEA100M16LL
C 701 702 703 707 723 724 806 808 1001	CKSQYB103K25
C 705 712	CKSQYB472K50
C 709	CSZSR3R3M16
C 710 711	CSZS010M16
C 714	CKSQYB223K50
C 715	CKSQYB393K50
C 717	CKSQYB682K50
C 721 722	CCSQCH180J50
C 801 802 803 804	CEA2R2M50LL
C 813 814 815 816 828 829 830	CEA4R7M35LL
C 827	CEA4R7M35LL
C 834	CEA4R7M35LL

Key Board Unit
Consists of • Key Board P.C.Board • Switch P.C.Board

Unit Number : CWM4046
Unit Name : Key Board Unit
(KEH-P9200RDS/EW, X1BEW, KEH-P8200RDS/EW, X1BEW)

MISCELLANEOUS

		Part No.
IC 901		PD5273A
IC 902		HD61602RH
IC 905	HIC Module	RS-30
Q 903		2SC2712
D 901 902		MA153-MC
D 903	LED	CL170FGCD
D 904 905 906 907 908	LED	CL170FGCD
D 909 910 911 912 913	LED	CL170FGCD
D 914 915 916 917 918	LED	CL170FGCD
D 919 920 921 922 923	LED	CL170FGCD
D 924	LED	CL170FGCD
D 926		MA151K-MH
L 901	Inductor	LCTA4R7K4532
L 902 903	Inductor	LCTB2R2K2125
X 901	Ceramic Resonator 4.9152MHz	CSS1084
S 901 906 907 912	Switch	CSG1043
S 902 903 904 905	Switch	CSG1041
S 908 909 910 911	Switch	CSG1041
S 913 918 920 921	Switch	CSG1043
S 914 915 916 917	Switch	CSG1041

=====Circuit Symbol & No. Part Name=====	Part No.
S 919 Switch	CSG1043
S 930 Switch	CSN1027
EL	CEL1424
LCD901 LCD	CAW1261

RESISTORS

	Part No.
R 901 902	RS1/2S222J
R 904	RS1/16S121J
R 905	RS1/8S151J
R 906 907 908 909 910 911 912 913 914 915	RS1/16S470J
R 920 923 935 936 955	RS1/16S473J
R 921 922 924 925 926 929 930 931	RS1/16S472J
R 933 957	RS1/16S102J
R 934	RA3C102J
R 938 942	RA4C102J
R 939	RS1/16S103J
R 946 947 952	RS1/4S391J
R 948 949 950 951	RS1/4S391J
R 958	RS1/16S2R2J

CAPACITORS

	Part No.
C 901 902	CSZSR100M6R3
C 914 921	CKSQYB104K16
C 915 916 917 919 920	CKSQYB473K16
C 922	CKSQYB273K50

Unit Number : CWM4219
Unit Name : Inverter Unit

MISCELLANEOUS

		Part No.
Q 640		2SD1864
L 606	Transformer	CTT1038

RESISTORS

	Part No.
R 609	RS1/10S512J
R 621	RS1/10S241J

CAPACITORS

	Part No.
C 629	CKSQYB473K16
C 630	CEA100M16LL

Unit Number : CWE1356
Unit Name : Tuner Unit(KEH-P9200RDS/EW, X1BEW)

MISCELLANEOUS

	Part No.
IC 1	PA2021B
IC 51	HA12186F
IC 52	LA1868M-PA
Q 1	3SK195
Q 2 73	2SC4099
Q 3 5 6 10 11 51 87 210	DTC124EU
Q 20	DTC143TU
Q 41 86 152	2SC4116
Q 71	2SC4099
Q 72	HN3C01F
Q 83	2SA1586
Q 84 153 173	DTC124EU
Q 85 154	2SC4116
Q 141	IMX1
Q 142	DTA114TU
Q 171	IMX1
Q 172	IMD1
Q 201	FC12(12G)
D 1	1SV248
D 2 3 4	KV1410-F1

Circuit Symbol & No.	Part Name	Part No.
D 6 202		MA157-MR
D 31		1SV249
D 81 84		HVR320
D 82 83		HVR320
D 86 171		MA110-1A
D 151		DTZ3R6A
D 152		DTZ3R0A
D 201		MA110-1A
D 203		SVC203CP
L 1	Inductor	LCTBR12K2125
L 2 51 52	Inductor	LCTA150K3225
L 4	Coil	CTC1068
L 71 72	Inductor	LCTB3R9K2125
L 201	Inductor	CTF1197
L 202	Coil	CTB1105
L 204	Inductor	LCTB101K2125
L 205	Inductor	LCTA330K3225
L 206	Inductor	CTF1198
T 1	Coil	CTC1099
T 2	Coil	CTE1064
T 3	Coil	CTC1130
T 51	Coil	CTE1067
T 52	Coil	CTE1068
T 71	Coil	CTE1058
T 81	Coil	CTE1093
T 82	Coil	CTE1097
T 83 84	Coil	CTE1098
T 85	Coil	CTE1094
T 202	Coil	CTB1104
T 203	Coil	CTE1106
T 204	Coil	CTE1107
T 205	Coil	CTE1110
TC 1	Trimmer	CCL1019
TH 71 Thermistor	DTN-T202V221KS	GGC1072
CF 1 51 52	Filter	CTF1057
CF 201	Filter	CTF1027
CF 202	Ceramic Filter	CTF1321
X 81	Radiator	CSS1340
X 151	Radiator	CSS1314
X 201	Radiator	CSS1339
VR 51 81 152	Semi-fixed 47kΩ(B)	CCP1185
VR 52	Semi-fixed 22kΩ(B)	CCP1183
VR 71	Semi-fixed 2.2kΩ(B)	CCP1177
AR 1		DSP-141N

RESISTORS

R 1 3 10 113 114 131 133 171 172	RS1/16S223J
R 2	RS1/16S271J
R 5 144	RS1/16S153J
R 6	RS1/16S820J
R 7 13	RS1/16S563J
R 9 59 66	RS1/16S473J
R 11	RS1/16S474J
R 14 15 18 217	RS1/16S563J
R 21	RS1/16S221J
R 22	RS1/16S560J
R 25 83 126	RS1/16S273J
R 26 88	RS1/16S152J
R 27 123 141 149 173 174 177	RS1/16S223J
R 30 93 168	RS1/16S183J
R 31	RS1/16S181J
R 41 42 75 137 138 156 165 216	RS1/16S103J
R 43 74 89	RS1/16S153J
R 44 159	RS1/16S0R0J
R 45 76 79	RS1/16S331J
R 48	RS1/16S473J
R 50	RS1/16S121J
R 54 209 222	RS1/16S822J
R 55 81	RS1/16S681J
R 56 57 140 201	RS1/16S822J
R 58	RS1/16S243J
R 61 166 179 214	RS1/16S333J
R 63	RS1/16S334J
R 67	RS1/16S123J
R 68	RS1/16S681J
R 69	RS1/16S331J
R 70	RS1/16S0R0J
R 71	RS1/16S471J
R 72 77 80 97 101 213	RS1/16S222J
R 73	RS1/16S151J
R 78 241	RS1/16S471J
R 82 90 122 154	RS1/16S103J
R 84 85	RS1/16S393J
R 86 87	RS1/16S470J
R 91	RS1/16S512J
R 92	RS1/16S152J
R 94	RS1/16S183J
R 96	RS1/16S183J
R 98 139	RS1/16S123J
R 100	RS1/16S182J
R 102	RS1/16S564J
R 103 155	RS1/16S104J
R 104 132 136	RS1/16S472J
R 121 142 143	RS1/16S102J
R 124	RS1/16S472J
R 125	RS1/16S182J
R 127 128	RS1/16S124J
R 129 146 147	RS1/16S683J
R 134	RS1/16S682J
R 135	RS1/16S272J
R 145	RS1/16S562J
R 153 245	RS1/16S562J
R 157 176	RS1/16S104J
R 158	RS1/16S333J
R 160	RS1/16S105J
R 164	RS1/16S392J
R 167 230	RS1/16S333J
R 175	RS1/16S472J
R 178	RS1/16S334J
R 203	RS1/16S102J
R 205	RS1/16S823J
R 207	RS1/16S225J
R 215	RS1/16S150J
R 220	RS1/16S100J
R 221	RS1/16S273J
R 242	RS1/16S122J

CAPACITORS

C 1 2	CSRCH220J50
C 3 31 53 72 210 248	KSRYF473Z25
C 5	CSRCH270J50
C 7	CSRCH030C50
C 8 32 55 241 242	KSRYB222K50
C 9	CSRCH470J50
C 10	CSRSH080D50
C 11 14 19 20 21 22 41 43 51 61	KSRYB103K50
C 12 13	CSRCH050D50
C 15 91	KSRYF104Z25
C 16	CSRCH050D50
C 17	CSRRH100D50
C 18	CSRRH080D50
C 23	EVO10M50
C 24 81 163 213	KSRYB223K25

=====Circuit Symbol & No. Part Name=====										Part No.
C	25	104								CKSRYB682K50
C	28									CEV330M10
C	29	65	66	67	68	69	87	96	99	101 CKSRYB103K50
C	33	34	216							CCSRCH100D50
C	54									CCSRCH101J50
C	56									CCSRPH910J50
C	57									CCSRPH470J50
C	58									CKSYB274K16
C	60									CCSRCH560J50
C	62	129	172							CCSRCH101J50
C	63									CCSRCH020D50
C	70	105	132	140	155	156	174	201	203	207 CKSRYB103K50
C	82	98	146	159						CKSQYB104K16
C	83									CCSRCH150J50
C	84									CCSRCH070D50
C	85									CKSYB105K16
C	86									CCSRCH100D50
C	88	100								CKSRYB472K50
C	89	92								CCSRRH121J50
C	90									CKSRYB333K16
C	93									CKSRYB333K16
C	95	109	144	233						CKSRYB332K50
C	97	121								CCSRRH560J50
C	102									CKSYB474K16
C	103									CKSRYB102K50
C	108									CEVNP100M10
C	110									CCSRCH331J50
C	113									CKSRYB223K25
C	122									CKSQYB683K16
C	123	126	157	212	231	234				CEV100M16
C	124	143								CKSYB105K16
C	126	147								CKSRYB332K50
C	127	131								CCSRCH391J50
C	130	136	145	173	175	215	235			CKSRYB103K50
C	133									CEV100M16
C	134									CKSRYF104Z25
C	137									CKSRYB152K50
C	141	208								CEV470M16
C	142									CEV2R2M50
C	151	152								CKSRYB183K25
C	153									CKSQYB104K16
C	154	158	211							CKSYB105K16
C	160									CKSYB473K50
C	161									CKSRYB471K50
C	165									CEV2R2M50
C	171									CKSRYB681K50
C	176									CKSRYF473Z25
C	177									CKSRYB102K50
C	180									CKSRYB223K25
C	204									CCSRTH101J50
C	206									CCSRTH820J50
C	209	220	223	225	227	228				CKSRYB103K50
C	214									CKSRYB153K25
C	218									CEV4R7M35
C	219									CKSQYB473K25
C	221									CCSRCH330J50
C	222									CCSRCH270J50
C	226									CEV4R7M35
C	229									CKSYB684K16
C	230									CKSRYB472K50
C	232									CCSRCH390J50

=====Circuit Symbol & No. Part Name=====										Part No.
Unit Number : CWE1357										
Unit Name : Tuner Unit(KEH-P8200RDS/EW, X1BEW, KEX-P820RDS/EW)										
MISCELLANEOUS										
IC	1									PA2021B
IC	52									LA1868M-PA
Q	1									3SK195
Q	2	73								2SC4099
Q	3	5	6	10	11	51	210			DTC124EU
Q	20									DTC143TU
Q	41	152								2SC4116
Q	71									2SC4099
Q	72									HN3C01F
Q	153									DTC124EU
Q	154									2SC4116
Q	201									FC12(12G)
D	1									1SV248
D	2	3	4							KV1410-F1
D	6	202								MA157-MR
D	31									1SV249
D	151									DTZ3R6A
D	152									DTZ3R0A
D	201									MA110-1A
D	203									SVC203CP
L	1							Inductor		LCTBR12K2125
L	2	51	52					Inductor		LCTA150K3225
L	4							Coil		CTC1068
L	71	72						Inductor		LCTB3R9K2125
L	201							Inductor		CTF1197
L	202							Coil		CTB1105
L	204							Inductor		LCTB101K2125
L	205							Inductor		LCTA330K3225
L	206							Inductor		CTF1198
T	1							Coil		CTC1099
T	2							Coil		CTE1064
T	3							Coil		CTC1130
T	51							Coil		CTE1067
T	52							Coil		CTE1068
T	71							Coil		CTE1058
T	202							Coil		CTB1104
T	203							Coil		CTE1106
T	204							Coil		CTE1107
T	205							Coil		CTE1110
TC	1							Trimmer		CCL1019
TH	71							Thermistor	DTN-T202V221KS	GGC1072
CF	1	51	52					Filter		CTF1057
CF	201							Filter		CTF1027
CF	202							Ceramic Filter		CTF1321
X	151									CSS1314
X	201									CSS1339
VR	51	152	156					Semi-fixed 47kΩ(B)		CCP1185
VR	52							Semi-fixed 22Ω(B)		CCP1183
AR	1									DSP-141N
RESISTORS										
R	1	3	10	113	114					RS1/16S22ΩJ
R	2									RS1/16S27ΩJ
R	5									RS1/16S15ΩJ
R	6									RS1/16S82ΩJ
R	7	13								RS1/16S56ΩJ
R	9	59	66							RS1/16S47ΩJ
R	11									RS1/16S47ΩJ
R	14	15	18	217						RS1/16S56ΩJ
R	21									RS1/16S22ΩJ
R	22									RS1/16S56ΩJ

Circuit Symbol & No.	Part Name	Part No.
R 25		RS1/16S273J
R 26		RS1/16S152J
R 27		RS1/16S223J
R 30 168		RS1/16S183J
R 31		RS1/16S181J
R 41 42 75 156 165 216		RS1/16S103J
R 43 74		RS1/16S153J
R 44		RS1/16S0R0J
R 45 76 79		RS1/16S331J
R 48		RS1/16S473J
R 50		RS1/16S121J
R 54 209 222		RS1/16S822J
R 55		RS1/16S331J
R 56 57 201		RS1/16S822J
R 58		RS1/16S243J
R 61 166 214		RS1/16S333J
R 63		RS1/16S334J
R 67		RS1/16S123J
R 68		RS1/16S681J
R 69		RS1/16S331J
R 70		RS1/16S0R0J
R 71		RS1/16S471J
R 72 77 80 101 213		RS1/16S222J
R 73		RS1/16S152J
R 78		RS1/16S391J
R 102		RS1/16S564J
R 103 155		RS1/16S104J
R 104		RS1/16S472J
R 112		RS1/16S102J
R 153 245		RS1/16S562J
R 154		RS1/16S103J
R 157		RS1/16S104J
R 158		RS1/16S333J
R 159 161		RS1/16S103J
R 160		RS1/16S105J
R 164		RS1/16S183J
R 167 230		RS1/16S333J
R 169		RS1/16S0R0J
R 203		RS1/16S102J
R 205		RS1/16S823J
R 207		RS1/16S225J
R 215		RS1/16S150J
R 220		RS1/16S100J
R 221		RS1/16S273J
R 241		RS1/16S471J
R 242		RS1/16S122J

CAPACITORS

C 1 2		CCSRCH220J50
C 3 31 53 72 210 248		CKSRYF473Z25
C 5		CCSRCH270J50
C 7		CCSRCH030C50
C 8 32 241 242		CKSRYB222K50
C 9		CCSRCH470J50
C 10		CCSRSH080D50
C 11 14 19 20 21 22 41 43 51 61		CKSRYB103K50
C 12 13		CCSRCH050D50
C 15		CKSRYF104Z25
C 16		CCSRCH050D50
C 17		CCSRRH100D50
C 18		CCSRRH080D50
C 23		CEV010M50
C 24 163 213		CKSRYB223K25
C 25 104		CKSRYB682K50
C 28		CEV330M10
C 29 65 67 68 69 101		CKSRYB103K50
C 33 34 216		CCSRCH100D50
C 54		CCSRCH101J50
C 56		CCSRPH910J50
C 57		CCSRPH470J50
C 58		CKSYB394K16
C 60		CCSRCH560J50
C 62		CCSRCH101J50
C 63		CCSRCH020D50
C 70 105 155 156 201 203 207		CKSRYB103K50
C 71		CKSYRB103K50
C 102		CKSYB474K16
C 103		CKSRYB102K50
C 108		CEVNP100M10
C 109 233		CKSRYB332K50
C 110		CKSRYB332K50
C 113		CKSRYB223K25
C 157 212 231 234		CEV100M16
C 151 152		CKSRYB183K25
C 153		CKSQYB104K16
C 154 158 211		CKSYB105K16
C 159		CKSQYB104K16
C 160		CKSYB473K50
C 161		CKSRYB471K50
C 162		CEV010M50
C 165		CEV2R2M50
C 204		CCSRTH101J50
C 206		CCSRTH820J50
C 208		CEV470M16
C 209 220 223 225 227 228		CKSRYB103K50
C 214		CKSRYB153K25
C 215 235		CKSRYB103K50
C 218		CEV4R7M35
C 219		CKSQYB473K16
C 221		CCSRCH330J50
C 222		CCSRCH270J50
C 226		CEV4R7M35
C 229		CKSYB684K16
C 230		CKSRYB472K50
C 232		CCSRCH390J50

Unit Number : CWM3953
Unit Name : Deck Unit
(KEH-P9200RDS/EW, X1BEW, KEH-P8200RDS/EW, X1BEW)

MISCELLANEOUS

IC 251		CXA1911Q
IC 351		PA2020A
Q 351		2SB1260
Q 352		2SC4102
D 351		MA141K-MH
VR 301 302	Semi-fixed 22kΩ (B)	CTP1129

RESISTORS

R 255 256		RS1/16S181J
R 271		RS1/16S183J
R 272		RS1/16S203J
R 273 274 275 276 321 322 351 352 353 354		RS1/16S102J
R 277 281 282 283 284 373 374 375		RS1/16S0R0J
R 278 301 302 371 404		RS1/16S0R0J
R 355		RS1/16S274J
R 356		RS1/16S202J
R 357		RS1/16S472J
R 358 359		RS1/16S103J
R 360		RS1/16S102J
R 361		RS1/16S622J
R 372		RS1/16S0R0J
R 401		RS1/16S821J
R 402		RS1/16S392J
R 403		RS1/16S105J

=====Circuit Symbol & No. Part Name=====	Part No.
CAPACITORS	
C 251 252 253 254	CKSRYB391K50
C 255 256	CKSRYB103K50
C 257 258	CEV470M6R3
C 271 307 308	CKSQYB104K16
C 272 301 302	CEV100M16
C 303 304	CEV010M50
C 305 306	CKSQYB683K16
C 322	CEV100M16
C 351	CKSYB224K25
C 352	CKSQYB392K50
C 353 356	CKSQYB103K50
C 354	CKSQYB473K50
C 355	CKSYB104K50
C 401	CCSRCH151J50
C 402	CKSYB684K16
C 403	CKSYB333K25
C 404	CKSRYB333K16
Unit Number : CWM3954	
Unit Name : Deck Unit(KEX-P820RDS/EW)	
MISCELLANEOUS	
IC 251	CXA1911Q
IC 351	PA2020A
Q 351	2SB1260
Q 352	2SC4102
D 351	MA141K-MH
VR 301 302 Semi-fixed 22kΩ (B)	CCP1129
RESISTORS	
R 251 252 253 254	RS1/16S243J
R 255 256	RS1/16S181J
R 271	RS1/16S183J
R 272	RS1/16S203J
R 273 274 275 276 321 322 351 352 353 354	RS1/16S102J
R 277 281 282 283 284 373 374 375	RS1/8S0R0J
R 278 301 302 371 404	RS1/16S0R0J
R 355	RS1/10S274J
R 356	RS1/10S202J
R 357	RS1/10S472J
R 358 359	RS1/10S103J
R 360	RS1/10S102J
R 361	RS1/10S622J
R 372	RS1/10S0R0J
R 401	RS1/16S821J
R 402	RS1/16S392J
R 403	RS1/16S105J
CAPACITORS	
C 251 252 253 254	CCSRCH331J50
C 255 256	CKSRYB103K50
C 257 258	CEV470M6R3
C 271 307 308	CKSQYB104K16
C 272 301 302	CEV100M16
C 303 304	CEV010M50
C 305 306	CKSQYB683K16
C 322	CEV100M16
C 351	CKSYB224K25
C 352	CKSQYB392K50
C 353 356	CKSQYB103K50
C 354	CKSQYB473K50
C 355	CKSYB104K50
C 401	CCSRCH151J50
C 402	CKSYB684K16

=====Circuit Symbol & No. Part Name=====	Part No.
C 403	CKSYB333K25
C 404	CKSRYB333K16
Unit Number :	
Unit Name : P.C.Board Unit	
S 1 2 Switch (70 μS,Load)	ESG1004
EGN 1 Photo-Interrupter	EGN1005
R 1	RD1/4HM181J
Unit Number :	
Unit Name : Reel P.C.Board	
EGN 2 3 Photo-Reflector	EGN1004
Miscellaneous Parts List	
M 1 Motor Unit (Main)	EXA1381
M 2 Motor Unit (Sub)	EXA1382
HD 1 Head Assy (KEH-P9200RDS/EW, X1BEW, KEH-P8200RDS/EW, X1BEW)	EXA1404
HD 1 Head Assy (KEX-P820RDS/EW)	EXA1398

- The KEH-P8200RDS/EW, X1BEW and KEX-P820RDS/EW Parts Lists enumerate the parts which differ from those enumerated in the KEH-P9200RDS/EW, X1BEW Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The KEH-P9200RDS/EW, X1BEW Parts List is given on page 16.

Tuner Amp Unit

Circuit Symbol & No.	Part Name	KEH-P9200RDS/EW, X1BEW Part No.	KEH-P8200RDS/EW, X1BEW Part No.
IC402,801,802		TC4066BF	•••••
IC803,804,805,806		NJM4558MD	•••••
Q622		DTA124EK	•••••
Q623,624,632		DTC144EK	•••••
Q625,626,627		DTA124EK	•••••
Q633		DTC144EK	•••••
Q801,802,803,804		2SC4213	•••••
Q805,806,807,808		2SC2712	•••••
Q813,814,815,816		DTC314TK	•••••
D627		MA153-MC	•••••
D629		MA151WK-MT	•••••
D801,802,803,804		MA8180M	•••••
L801,802,804	Inductor	LCTB2R2K2125	•••••
L803	Inductor	LCTB2R2K2125	•••••
S603	Switch	HSH-156	•••••
	Tuner Unit	CWE1356	CWE1357
R421,422,424,851,856,857,858		•••••	RS1/16S0R0J
R423,852		•••••	RS1/16S0R0J
R603		RS1/16S473J	•••••
R604		•••••	RS1/16S473J
R677,829,830,831,832,833,834,835,836,853		RS1/16S472J	•••••
R681,682,854		RS1/16S472J	•••••
R691		•••••	RS1/16S473J
R692		RS1/16S362J	•••••
R693		RS1/16S222J	RS1/16S0R0J
R694		•••••	RS1/16S0R0J
R789		•••••	RS1/16S0R0J
R801,802,803,804,837,838,839,840,849,850		•••••	RS1/16S0R0J
R805,806,807,808,813,814,815,816		RS1/16S223J	•••••
R817,818,819		RS1/16S154J	•••••
R820		RS1/16S154J	•••••
R821,822		RS1/16S114J	•••••
R823,824		RS1/16S114J	•••••
R825,826,827,828		RS1/16S224J	•••••
R841,842,843,844		RS1/16S334J	RS1/16S223J
R845,847		RS1/16S271J	RS1/16S821J
R846,848		RS1/16S271J	RS1/16S821J
R855		RS1/10S220J	•••••
R859,860,861,862		RS1/16S104J	•••••
R863		•••••	RS1/16S0R0J
R864		RS1/16S222J	•••••
C635		CCSQCH101J50	•••••
C647		CEA100M16LL	•••••
C801,802,803,804		CEA2R2M50LL	•••••
C805,807		CKSQYB103K25	•••••

Circuit Symbol & No.	Part Name	KEH-P9200RDS/EW, X1BEW Part No.	KEH-P8200RDS/EW, X1BEW Part No.
C806,808		CKSQYB103K25	•••••
C809,810,811,812		CCSQCH101J50	•••••
C813,814,815,816,827,828		CEA4R7M35LL	•••••
C825		CEA101M10LL	•••••
C829,830,831,832,833,834		CEA4R7M35LL	•••••

Tuner Amp Unit

Circuit Symbol & No.	Part Name	KEH-P9200RDS/EW, X1BEW Part No.	KEX-P820RDS/EW Part No.
IC402,801,802		TC4066BF	•••••
IC551		PAL003A	•••••
IC803,804,805,806		NJM4558MD	•••••
Q551,552		DTC124EK	•••••
Q622		DTA124EK	•••••
Q623,624,632		DTC144EK	•••••
Q625,626,627		DTA124EK	•••••
Q633		DTC144EK	•••••
Q801,802,803,804		2SC4213	•••••
Q805,806,807,808		2SC2712	•••••
Q813,814,815,816		DTC314TK	•••••
D626		ERA15-02VH	•••••
D627		MA153-MC	•••••
D629		MA151WK-MT	•••••
D801,802,803,804		MA8180M	•••••
L801,802,804	Inductor	LCTB2R2K2125	•••••
L803	Inductor	LCTB2R2K2125	•••••
S603	Switch	HSH-156	•••••
	Tuner Unit	CWE1356	CWE1357
R421,422,424,851,856,857,858		•••••	RS1/16S0R0J
R423,852		•••••	RS1/16S0R0J
R551,553,554		RS1/16S103J	•••••
R552		RS1/16S331J	•••••
R603		RS1/16S473J	•••••
R604		•••••	RS1/16S473J
R656		RS1/16S182J	RS1/16S472J
R677,829,830,831,832,833,834,835,836,853		RS1/16S472J	•••••
R681,682,854		RS1/16S472J	•••••
R691		•••••	RS1/16S473J
R692		RS1/16S362J	•••••
R693		RS1/16S222J	RS1/16S0R0J
R694		•••••	RS1/16S0R0J
R789		•••••	RS1/16S0R0J
R801,802,803,804,837,838,839,840,849,850		•••••	RS1/16S0R0J
R805,806,807,808,813,814,815,816		RS1/16S223J	•••••
R817,818,819		RS1/16S154J	•••••
R820		RS1/16S154J	•••••
R821,822		RS1/16S114J	•••••
R823,824		RS1/16S114J	•••••
R825,826,827,828		RS1/16S224J	•••••

Circuit Symbol & No.	Part Name	KEH-P9200RDS/EW, X1BEW Part No.	KEX-P820RDS/EW Part No.
R841,842,843,844		RS1/16S334J	RS1/16S223J
R845,847		RS1/16S271J	RS1/16S821J
R846,848		RS1/16S271J	RS1/16S821J
R855		RS1/10S220J	•••••
R859,860,861,862		RS1/16S104J	•••••
R863		•••••	RS1/16S0R0J
R864		RS1/16S222J	•••••
C551,552,553,554		CEAR22M50NPLL	•••••
C559,564		CEA010M50LL	•••••
C560		CEA220M16LL	•••••
C563		CEA330M10LL	•••••
C635		CCSQCH101J50	•••••
C647		CEA100M16LL	•••••
C801,802,803,804		CEA2R2M50LL	•••••
C805,807		CKSQYB103K25	•••••
C806,808		CKSQYB103K25	•••••
C809,810,811,812		CCSQCH101J50	•••••
C813,814,815,816,827,828		CEA4R7M35LL	•••••
C825		CEA101M10LL	•••••
C829,830,831,832,833,834		CEA4R7M35LL	•••••

Key Board Unit

Circuit Symbol & No.	Part Name	KEH-P9200RDS/EW, X1BEW Part No.	KEX-P820RDS/EW Part No.
D903	LED	CL170FGCD	CL170DCD
D904,905,906,907,908,909	LED	CL170FGCD	CL170DCD
D910,911,912,913,914,915	LED	CL170FGCD	CL170DCD
D916,917,918,919,920,921	LED	CL170FGCD	CL170DCD
D922,923,924	LED	CL170FGCD	CL170DCD
LCD901	LCD	CAW1261	CAW1303

● **LCD(CAW1261)(KEH-P9200RDS/EW, X1BEW, KEH-P8200RDS/EW, X1BEW)**
(CAW1303)(KEX-P820RDS/EW)

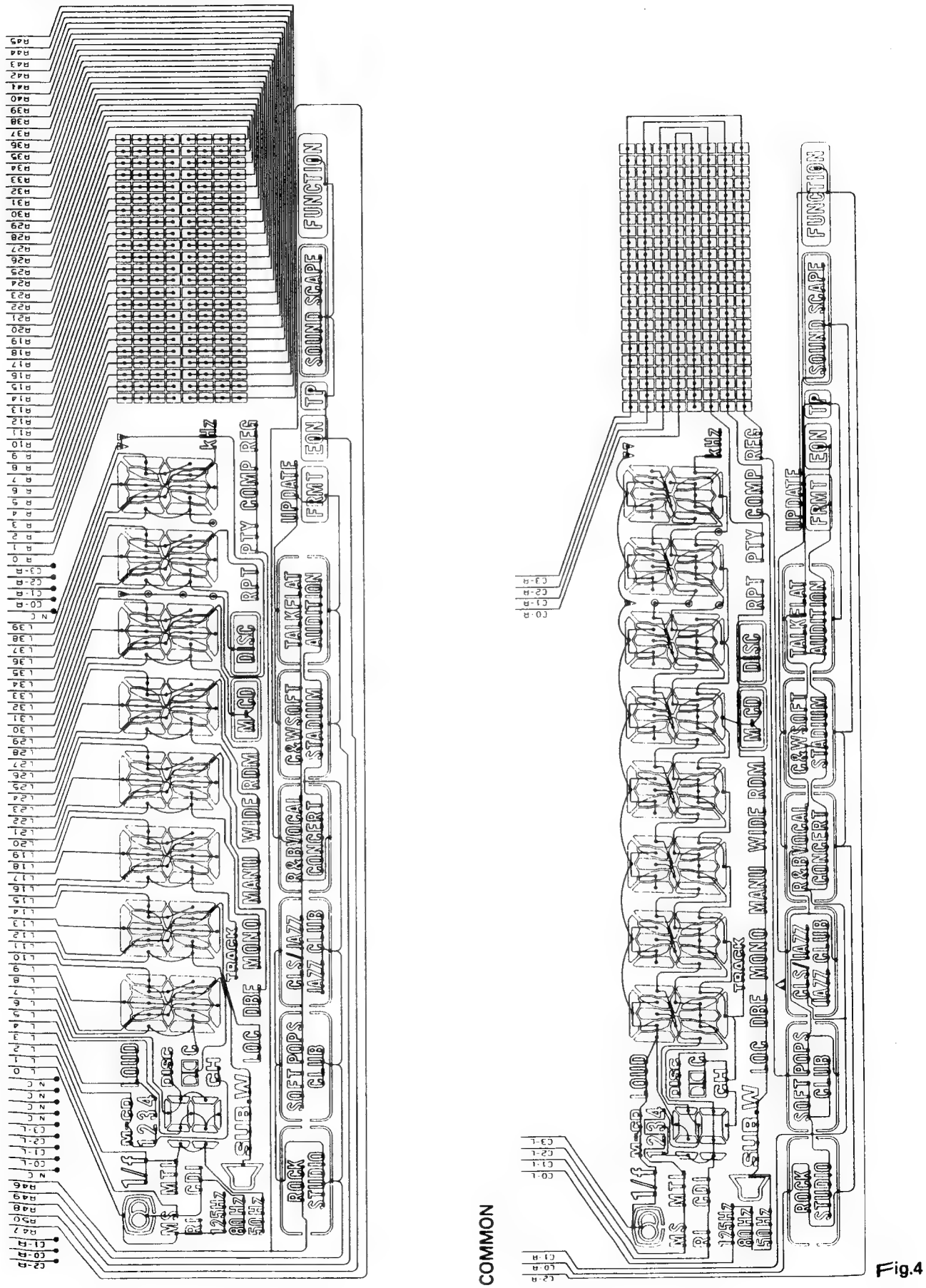


Fig.4

4. BLOCK DIAGRAM

● **KEH-P9200RDS/EW, X1BEW**

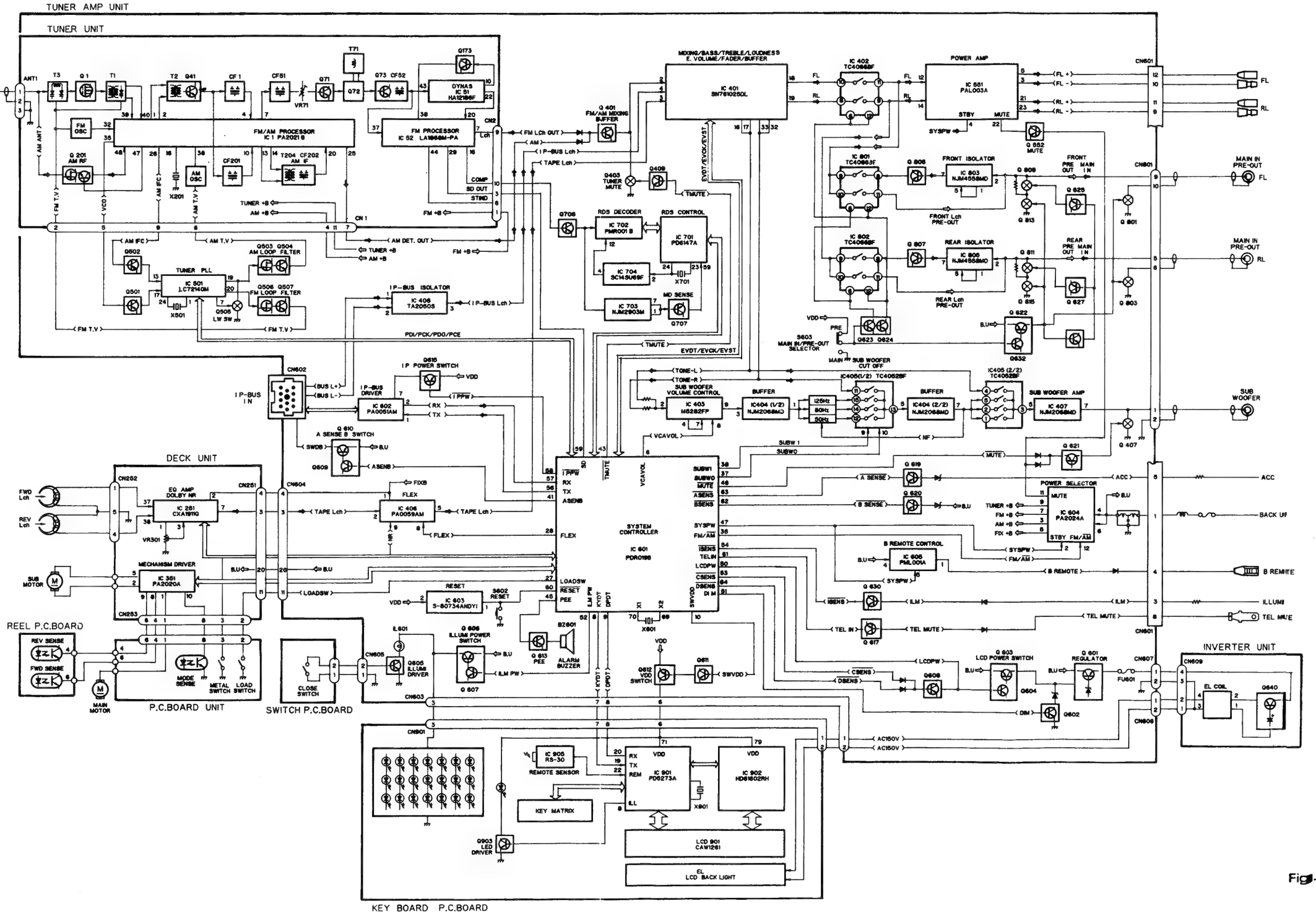
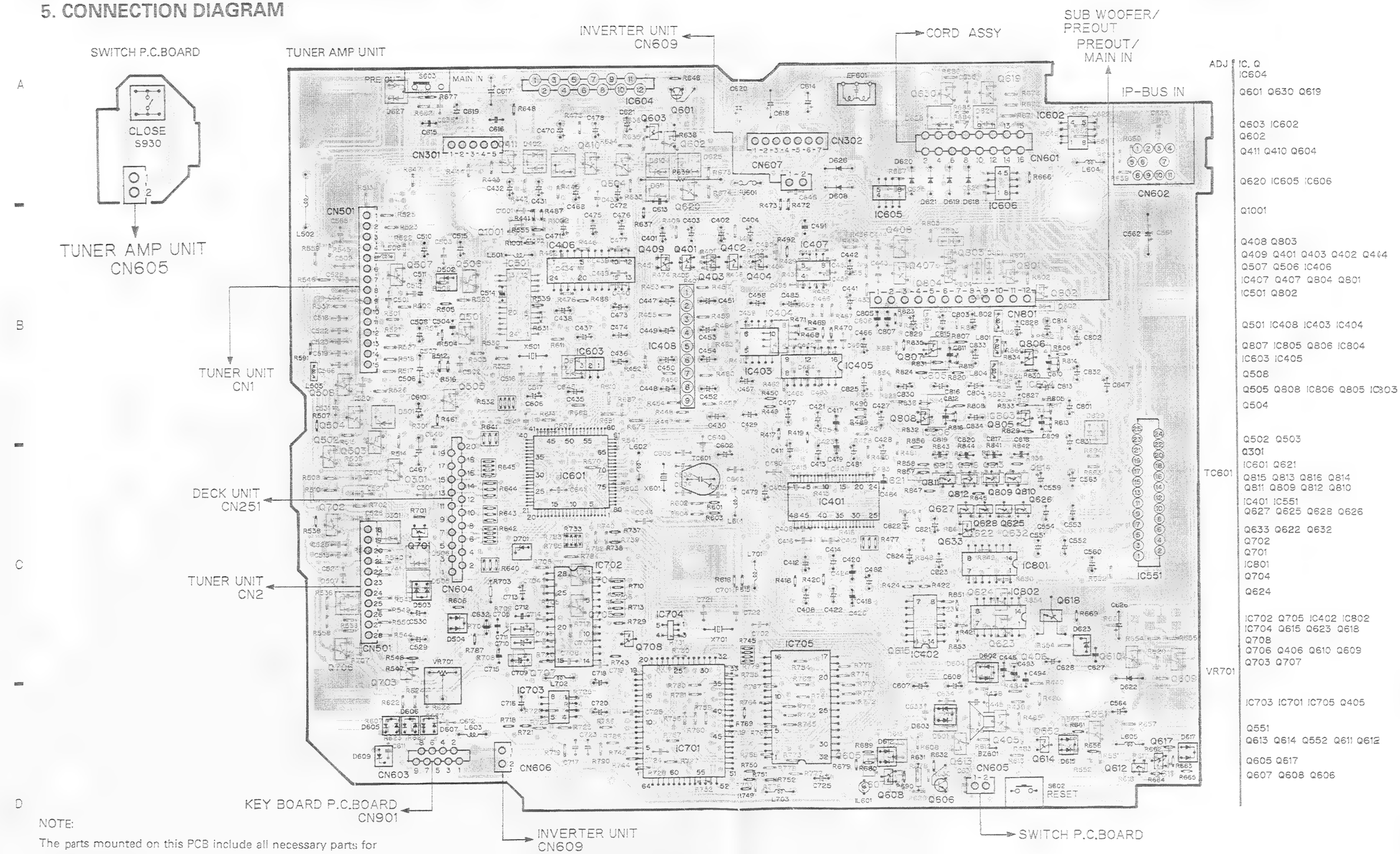


Fig.5

5. CONNECTION DIAGRAM



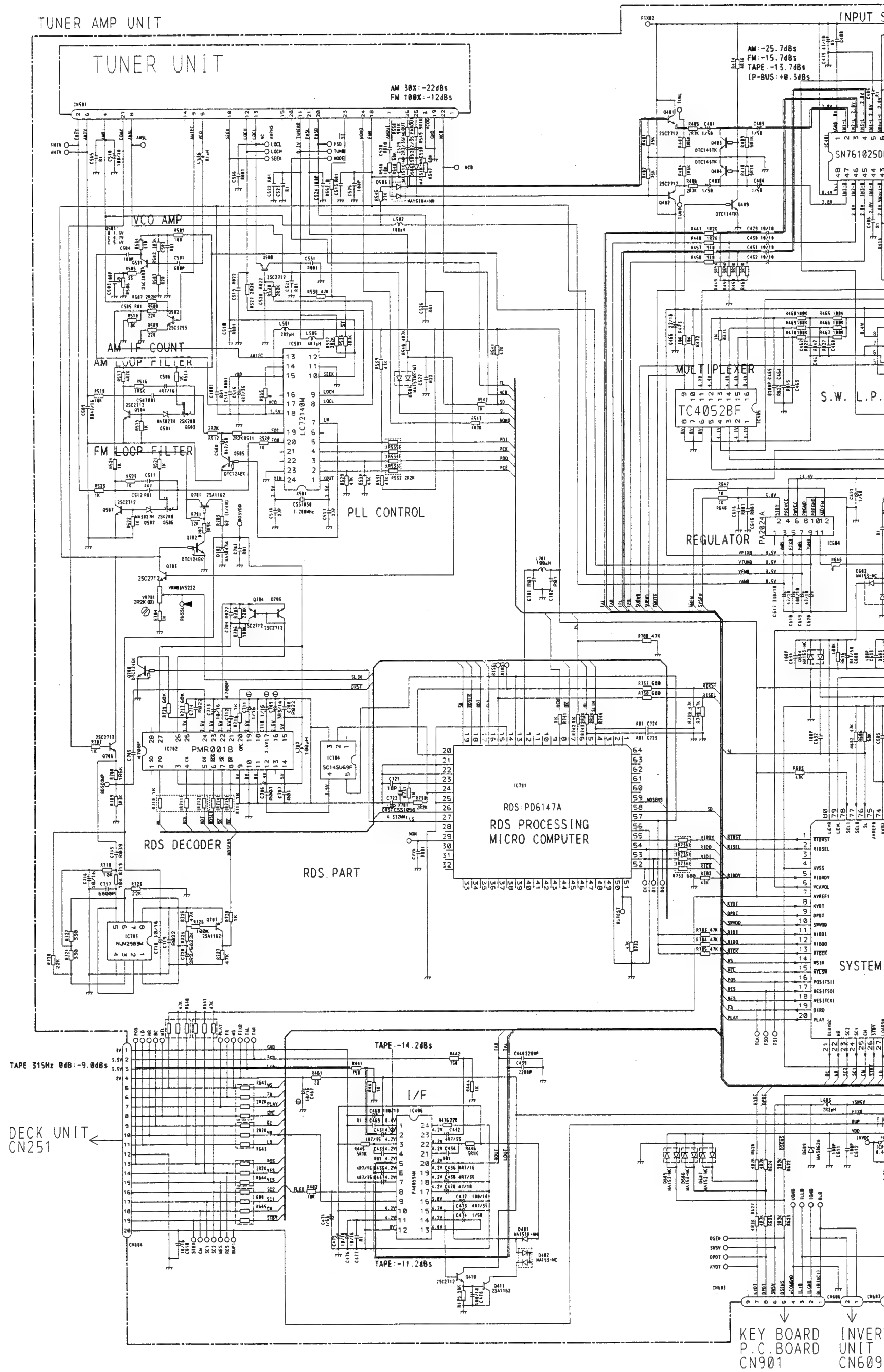
NOTE:

The parts mounted on this PCB include all necessary parts for several destinations.

For further information for respective destinations, be sure to check with the schematic diagram.

Fig.6

6. SCHEMATIC CIRCUIT DIAGRAM(KEH-P9200RDS/EW, X1BEW)



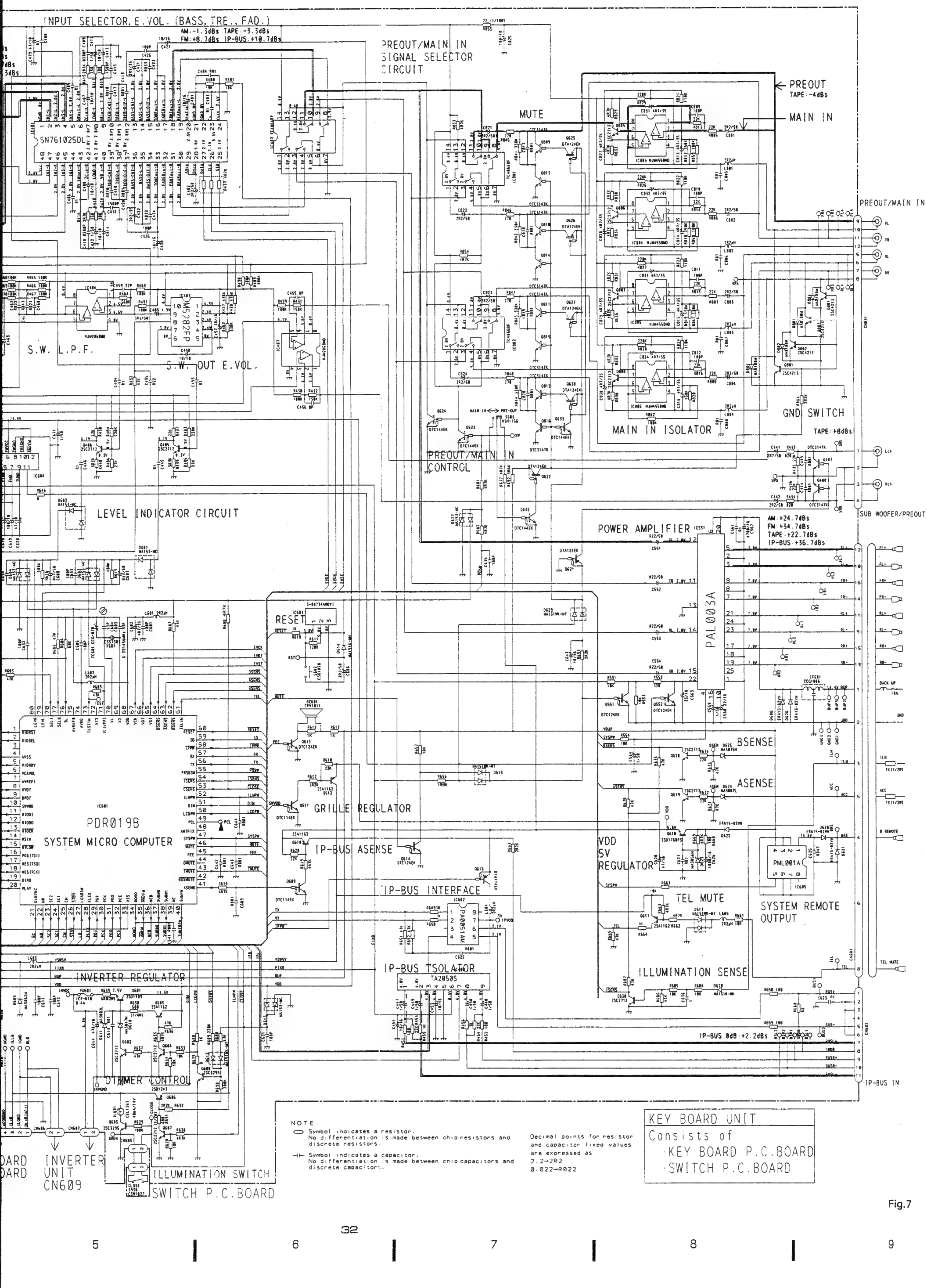
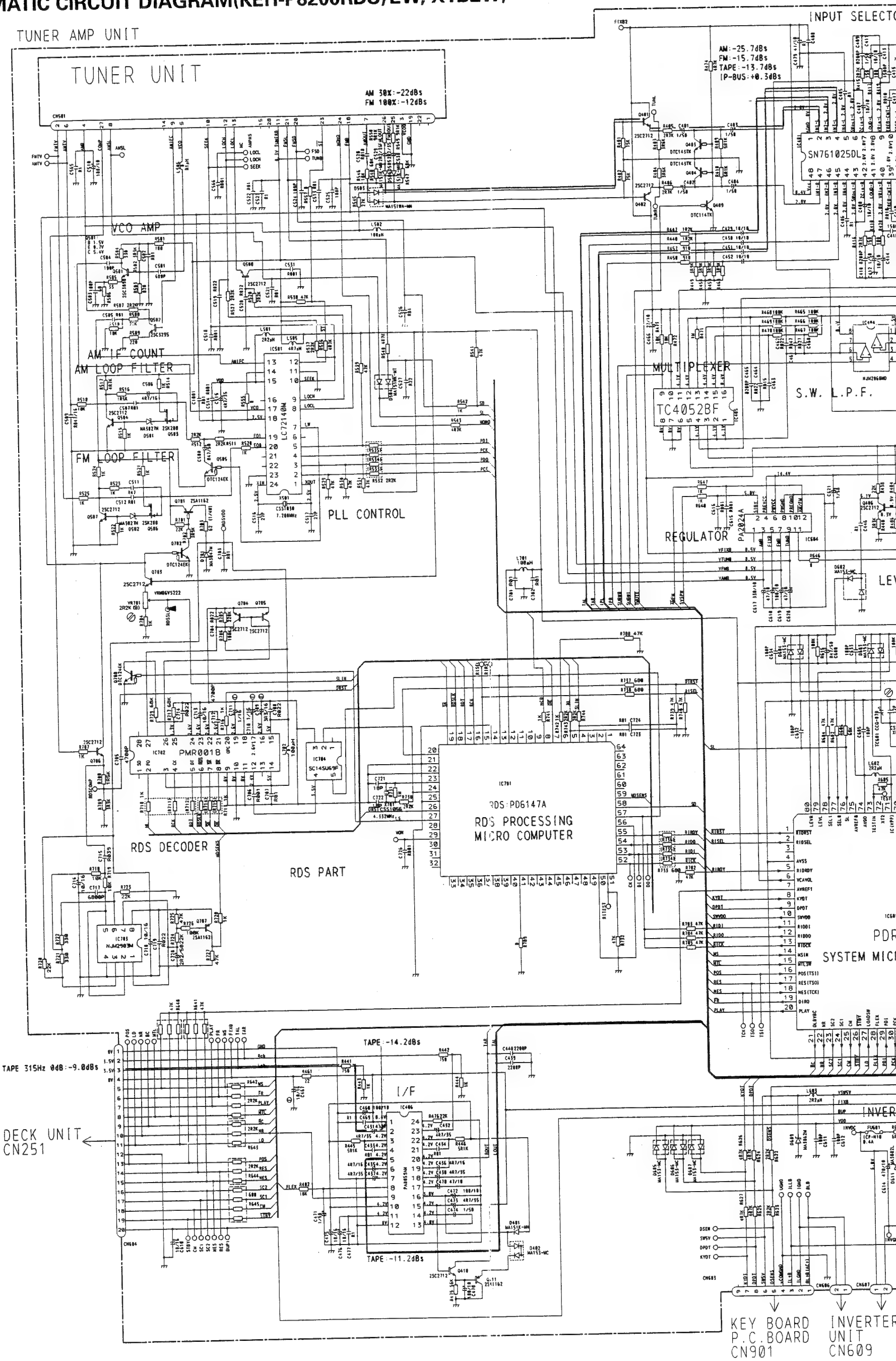

INPUT SELECTOR, E.VOL. (BASS, TRE., FAD.)
AM:-1.3dBs TAPE:-3.3dBs
FM:+8.7dBs IP-BUS:+10.7dBs
SN761025DL
S.W. L.P.F.
S.W. OUT E.VOL.
LEVEL INDICATOR CIRCUIT
PDR019B
SYSTEM MICRO COMPUTER
PREOUT/MAIN IN
SIGNAL SELECTOR
CIRCUIT
MUTE
PREOUT
TAPE:-4dBs
MAIN IN
PREOUT/MAIN IN
MAIN IN ISOLATOR
GND SWITCH
TAPE:+8dBs
PREOUT/MAIN IN
CONTROL
SUB WOOFER/PREOUT
POWER AMPLIFIER
PAL003A
AM:+24.7dBs
FM:+34.7dBs
TAPE:+22.7dBs
IP-BUS:+36.7dBs
RESET
GRILLE REGULATOR
IP-BUS ASENSE
IP-BUS INTERFACE
IP-BUS TSOLATOR
IP-BUS 0dB:+2.2dBs
BSENSE
ASENSE
VDD
5V
REGULATOR
TEL MUTE
SYSTEM REMOTE
OUTPUT
ILLUMINATION SENSE
INVERTER REGULATOR
DIMMER CONTROL
INVERTER
UNIT
CN609
ILLUMINATION SWITCH
SWITCH P.C.BOARD
IP-BUS IN
TEL MUTE
B REMOTE
BACK UP
10A
Lch
Rch
FL
FR
RL
RR
NOTE:
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022
KEY BOARD UNIT
Consists of
·KEY BOARD P.C.BOARD
·SWITCH P.C.BOARD

Fig.7

7. SCHEMATIC CIRCUIT DIAGRAM(KEH-P8200RDS/EW, X1BEW)



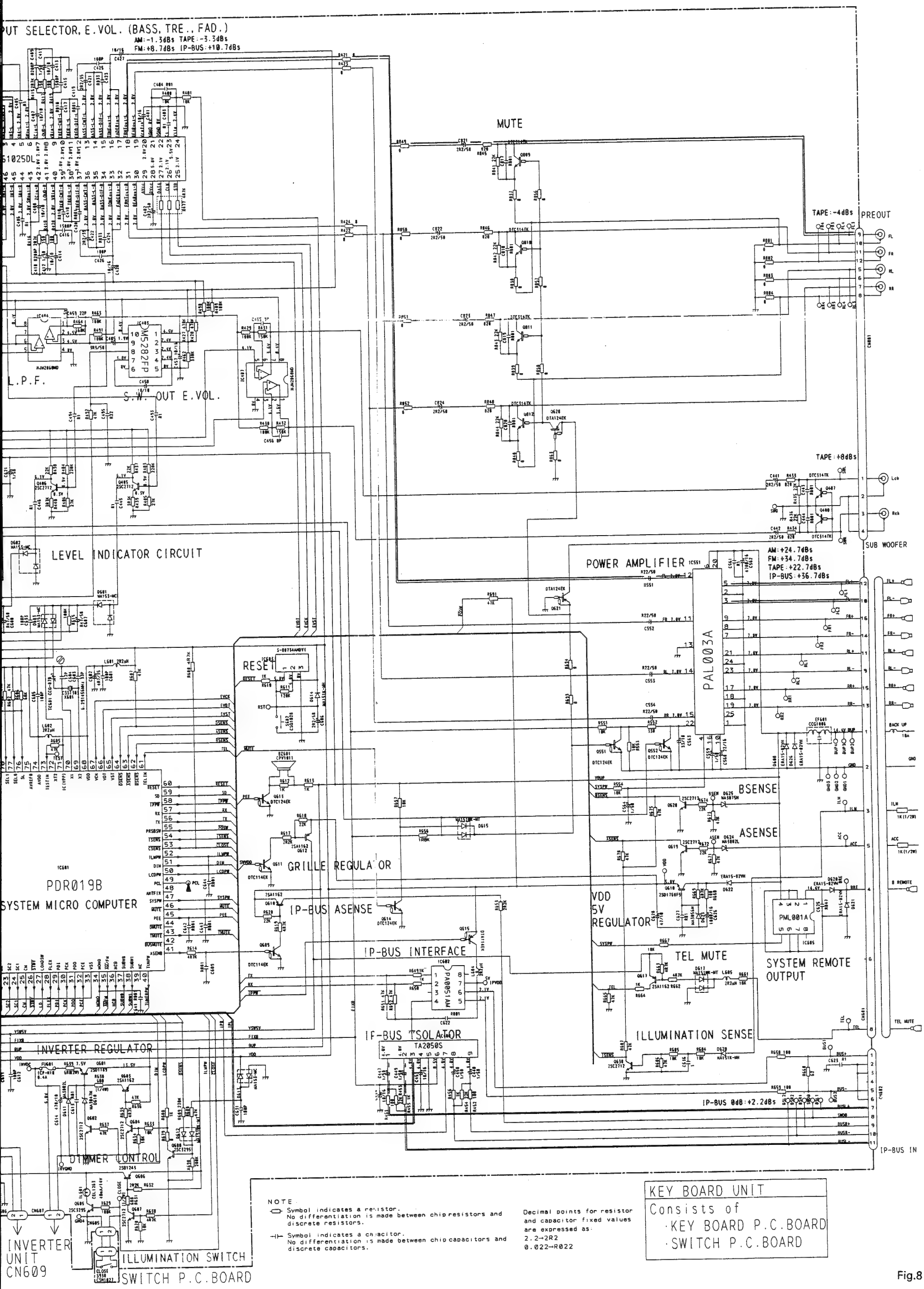
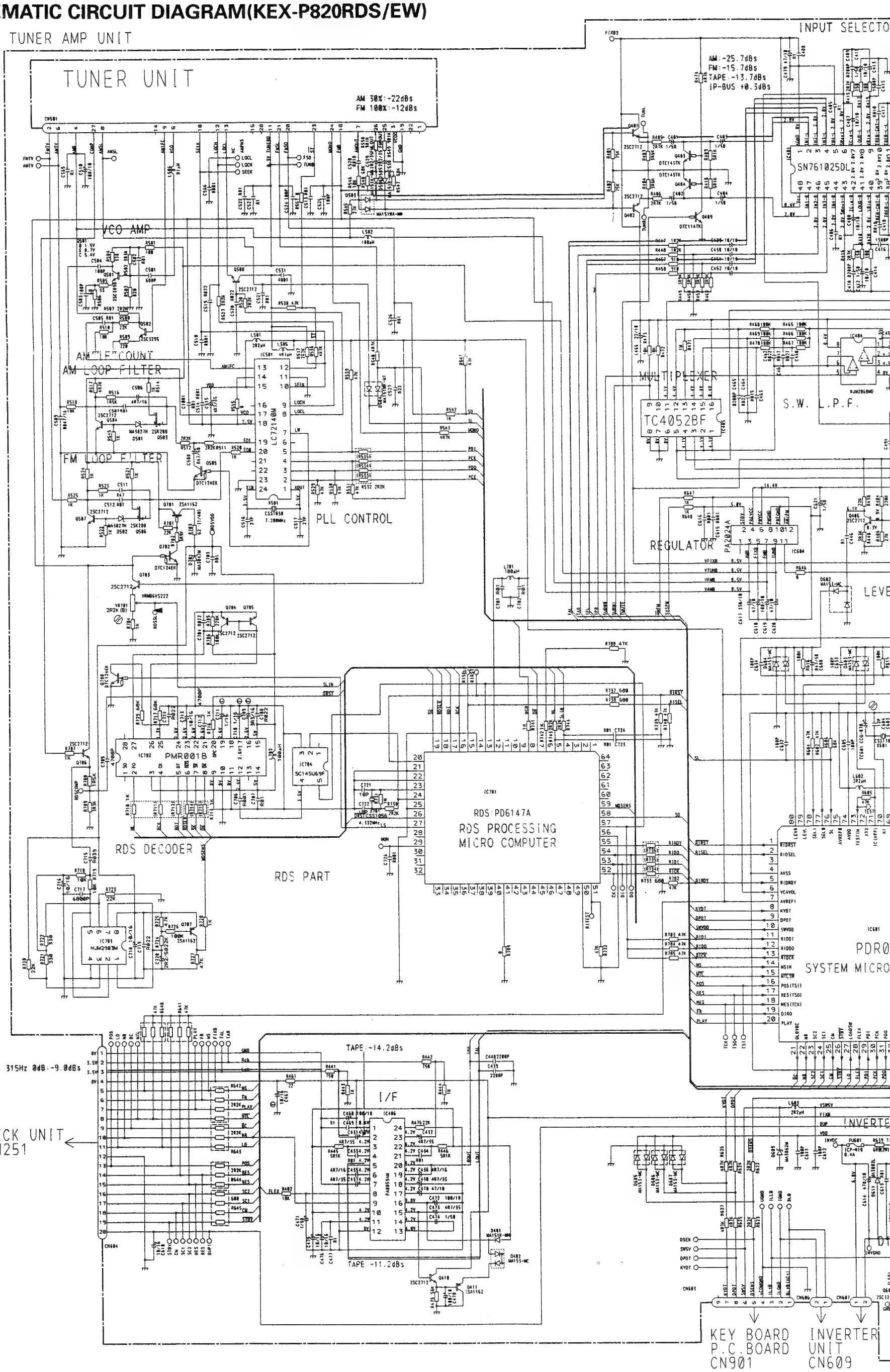
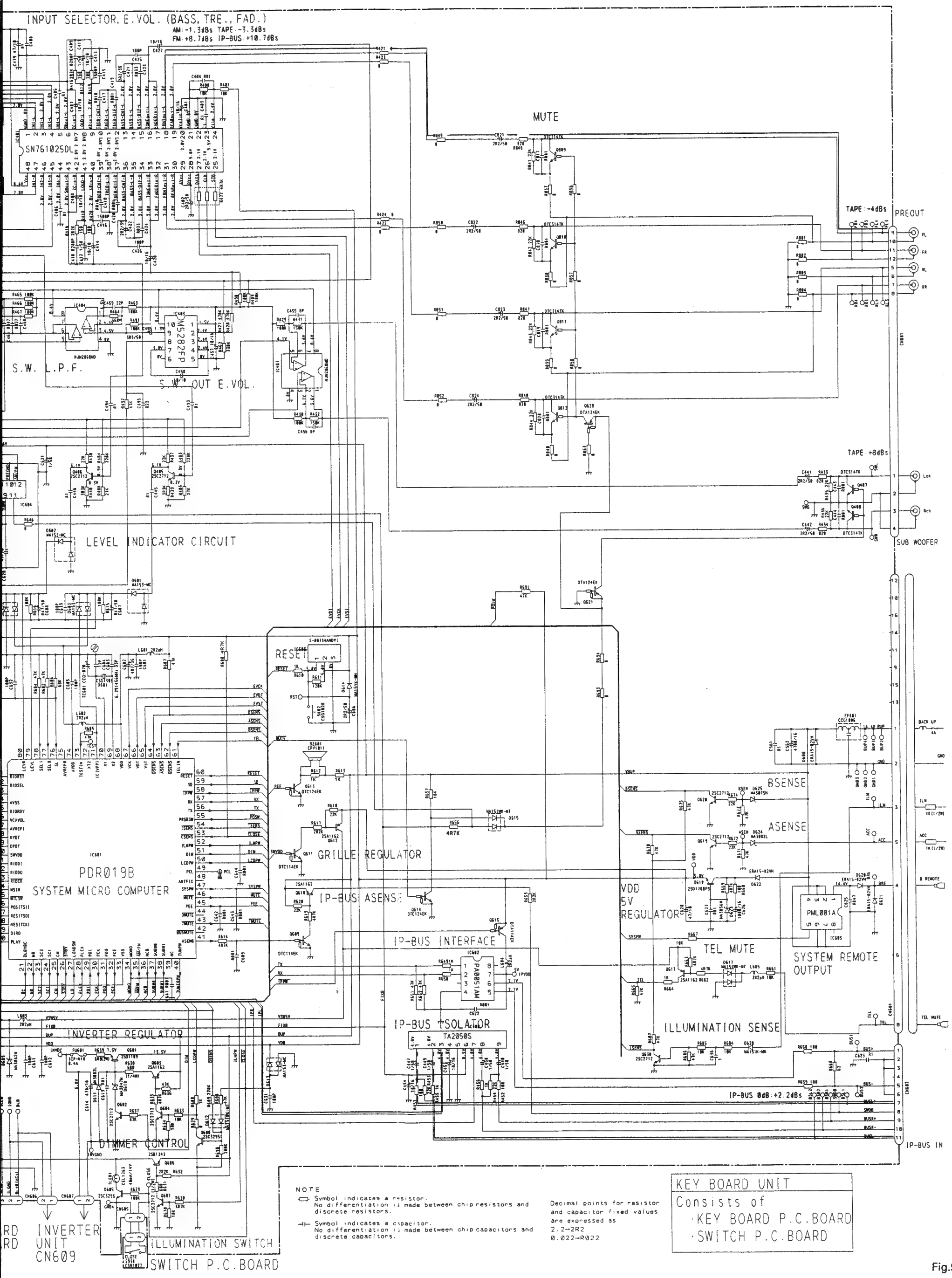

OUT SELECTOR, E.VOL. (BASS, TRE., FAD.)
AM:-1.3dBs TAPE:-3.3dBs
FM:+8.7dBs IP-BUS:+10.7dBs
MUTE
TAPE:-4dBs
PREOUT
FL
FR
RL
RR
TAPE:+8dBs
Lch
Rch
SUB WOOFER
L.P.F.
S.W. OUT E.VOL.
LEVEL INDICATOR CIRCUIT
POWER AMPLIFIER
AM:+24.7dBs
FM:+34.7dBs
TAPE:+22.7dBs
IP-BUS:+36.7dBs
PAL003A
BACK UP
B REMOTE
TEL MUTE
RESET
GRILLE REGULATOR
IP-BUS ASENSE
IP-BUS INTERFACE
IP-BUS ISOLATOR
BSENSE
ASENSE
VDD
5V
REGULATOR
TEL MUTE
SYSTEM REMOTE
OUTPUT
ILLUMINATION SENSE
IP-BUS 0dB:+2.2dBs
IP-BUS IN
PDR019B
SYSTEM MICRO COMPUTER
INVERTER REGULATOR
DIMMER CONTROL
INVERTER
UNIT
CN609
ILLUMINATION SWITCH
SWITCH P.C.BOARD
NOTE
Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.
Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022
KEY BOARD UNIT
Consists of
·KEY BOARD P.C.BOARD
·SWITCH P.C.BOARD

Fig.8

5 6 7 8 9

8. SCHEMATIC CIRCUIT DIAGRAM(KEX-P820RDS/EW)





NOTE:

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

KEY BOARD UNIT
Consists of
·KEY BOARD P.C.BOARD
·SWITCH P.C.BOARD

Fig.9

9. CIRCUIT DIAGRAM AND PATTERN

9.1 TUNER UNIT(KEH-P9200RDS/EW, X1BEW)

● Circuit Diagram

NOTE

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

TUNER UNIT

FM SIGNAL

MW/LW SIGNAL

FM FRONT END

MW/LW RF

MW/LW OSC

FM OSC

MW/LW DET

IC1 PA20218

10.7MHz

10.71MHz

TUNER AMP UNIT
CN501

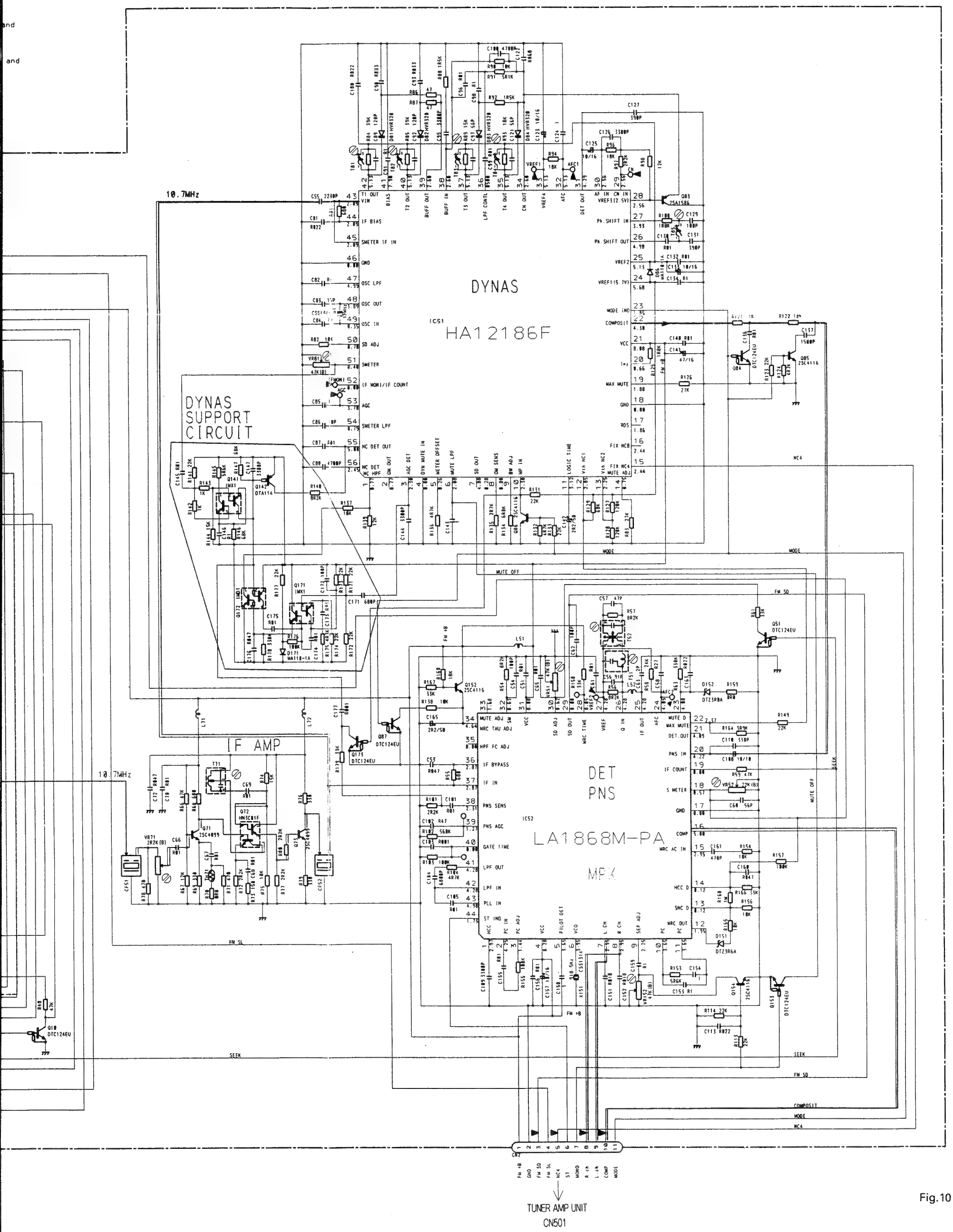

10.7MHz
DYNAS
HA12186F
IC51
DYNAS
SUPPORT
CIRCUIT
IF AMP
10.7MHz
DET
PNS
LA1868M-PA
MPX
IC52
MUTE OFF
FM SD
SEEK
COMPOSIT
MODE
NC4
FM SL
FM +8
T1 OUT
VIN
IF BIAS
SMETER IF IN
GND
OSC LPF
OSC OUT
OSC IN
SD ADJ
SMETER
IF MONI/IF COUNT
AGC
SMETER LPF
NC DET OUT
NC DET
NC HPF
MUTE ADJ
MRC TAU ADJ
HPF FC ADJ
IF BYPASS
IF IN
PNS SENS
PNS AGC
GATE TIME
LPF OUT
LPF IN
PLL IN
ST IND
MAX MUTE
DET.OUT
PNS IN
IF COUNT
S METER
GND
COMP
MRC AC IN
HCC O
SNC O
MRC OUT
MODE IND
COMPOSIT
VCC
FIX NCB
FIX NC4
MUTE ADJ
CN2
FM +8
GND
FM SD
FM SL
NC4
ST
MONO
R ch
L ch
COMP
MODE
TUNER AMP UNIT
CN501

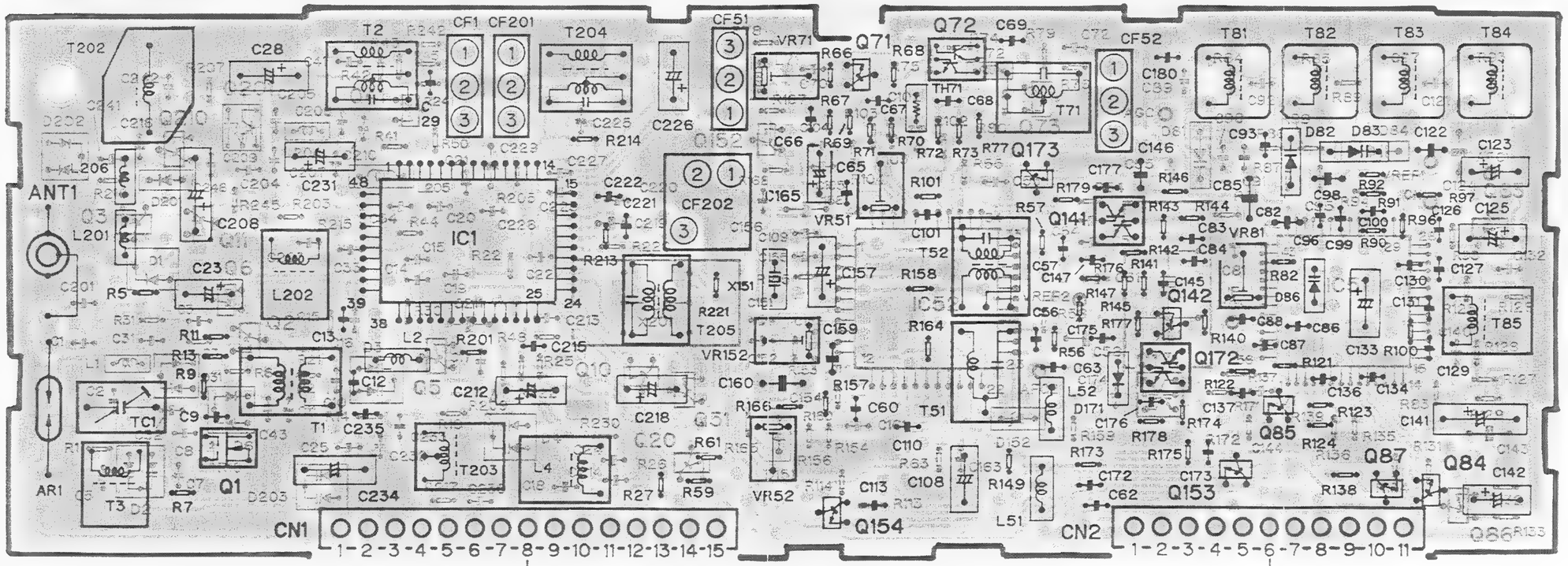
Fig.10

Connection Diagram

TUNER UNIT

IC, Q Q3 Q210 Q11 Q201 Q6 Q1 Q2 Q41 IC1 Q5 Q10 Q51 Q20 Q152 Q71 Q154 Q72 IC52 Q73 Q173 Q141 Q142 Q172 Q171 Q153 Q85 IC51 Q87 Q84 Q83 Q86

ADJ TC1 T3 T1 T2 T203 T204 L4 T205 VR71 VR152 VR52 VR51 T52 T51 T71 T81 VR81 T82 T83 T84 T85



TUNER AMP UNIT
CN501

Fig.11

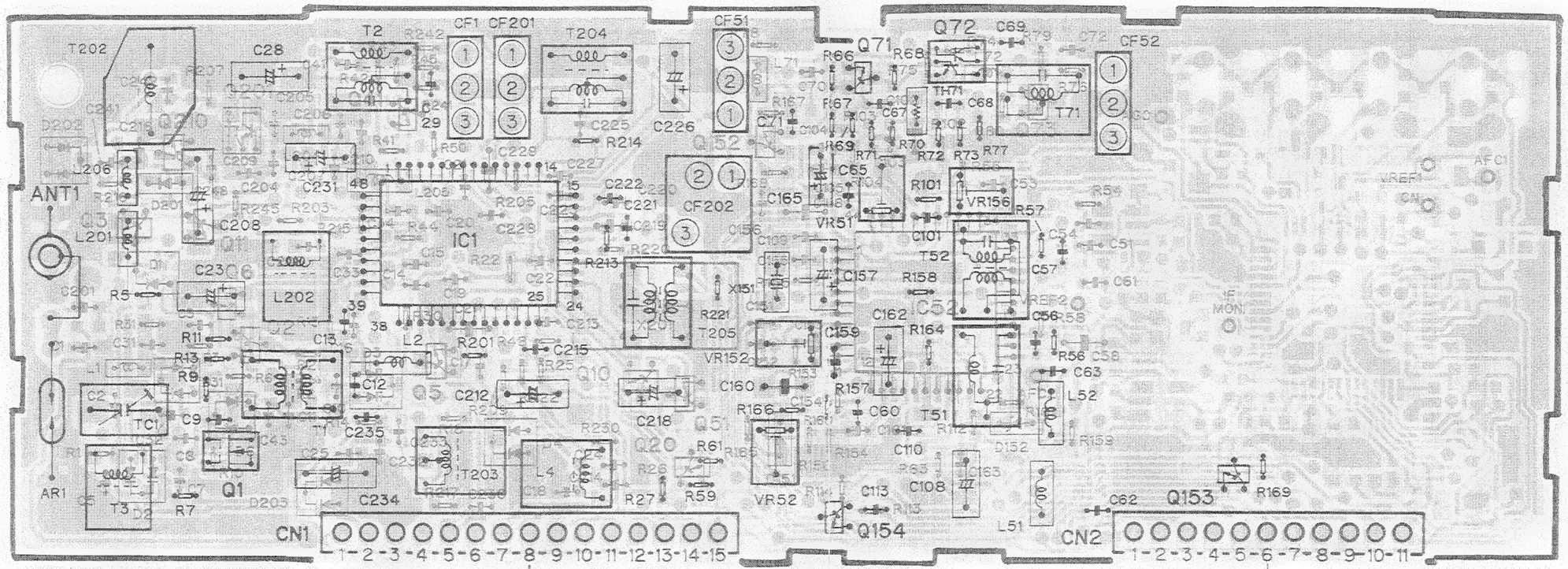
9.2 TUNER UNIT(KEH-P8200RDS/EW, X1BEW, KEX-P820RDS/EW)

● Connection Diagram

TUNER UNIT

IC, Q Q3 Q210 Q11 Q201 Q6 Q1 Q2 IC1 Q41 Q5 Q51 Q10 Q20 Q152 Q71 Q154 Q72 IC52 Q73 Q153

ADJ TC1 T3 T1 T2 T203 T204 T205 L4 VR152 VR52 VR51 VR156 T52 T51 T71

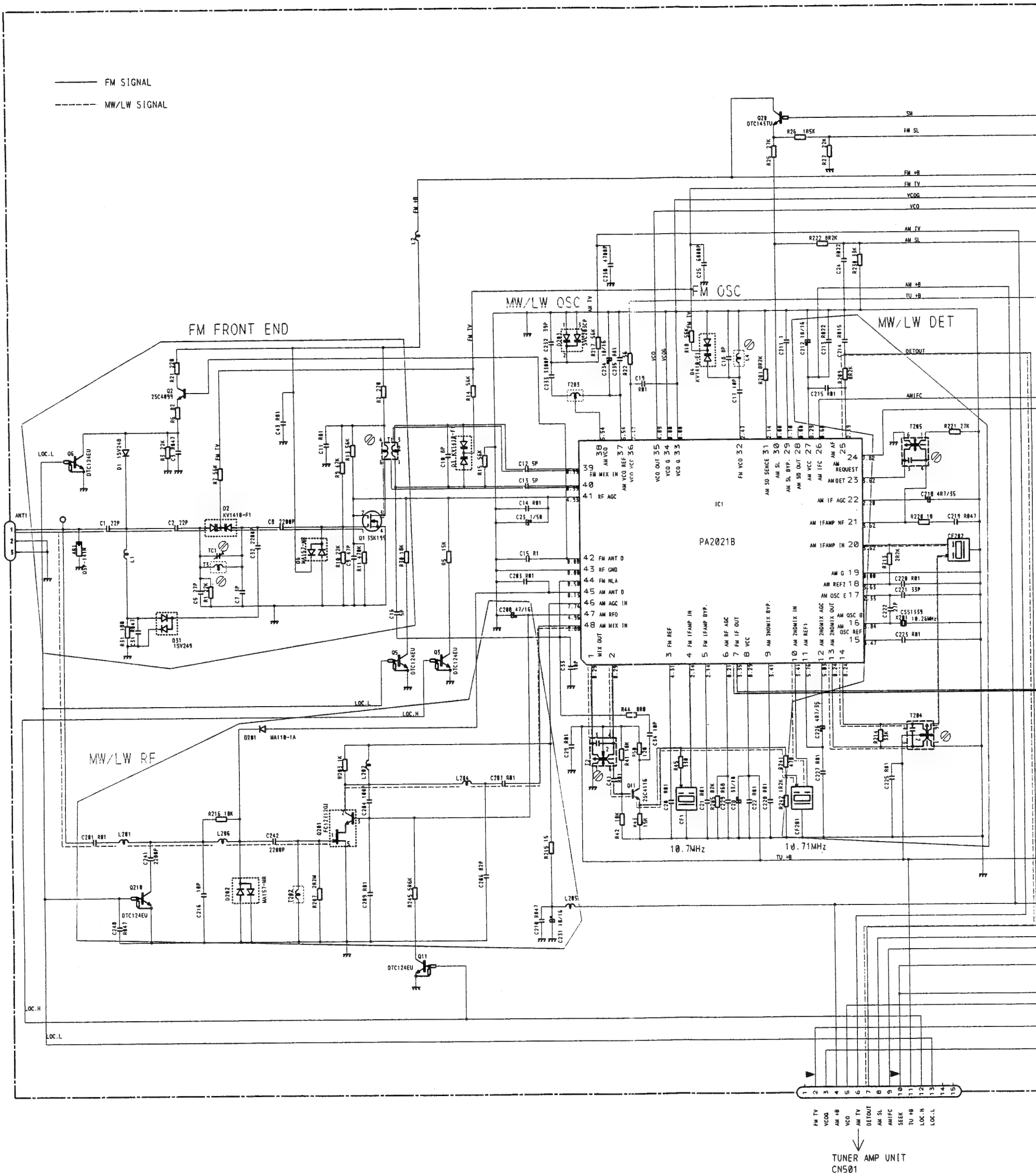


TUNER AMP UNIT
CN501

Fig.12

● **Circuit Diagram**

TUNER UNIT



NOTE :

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

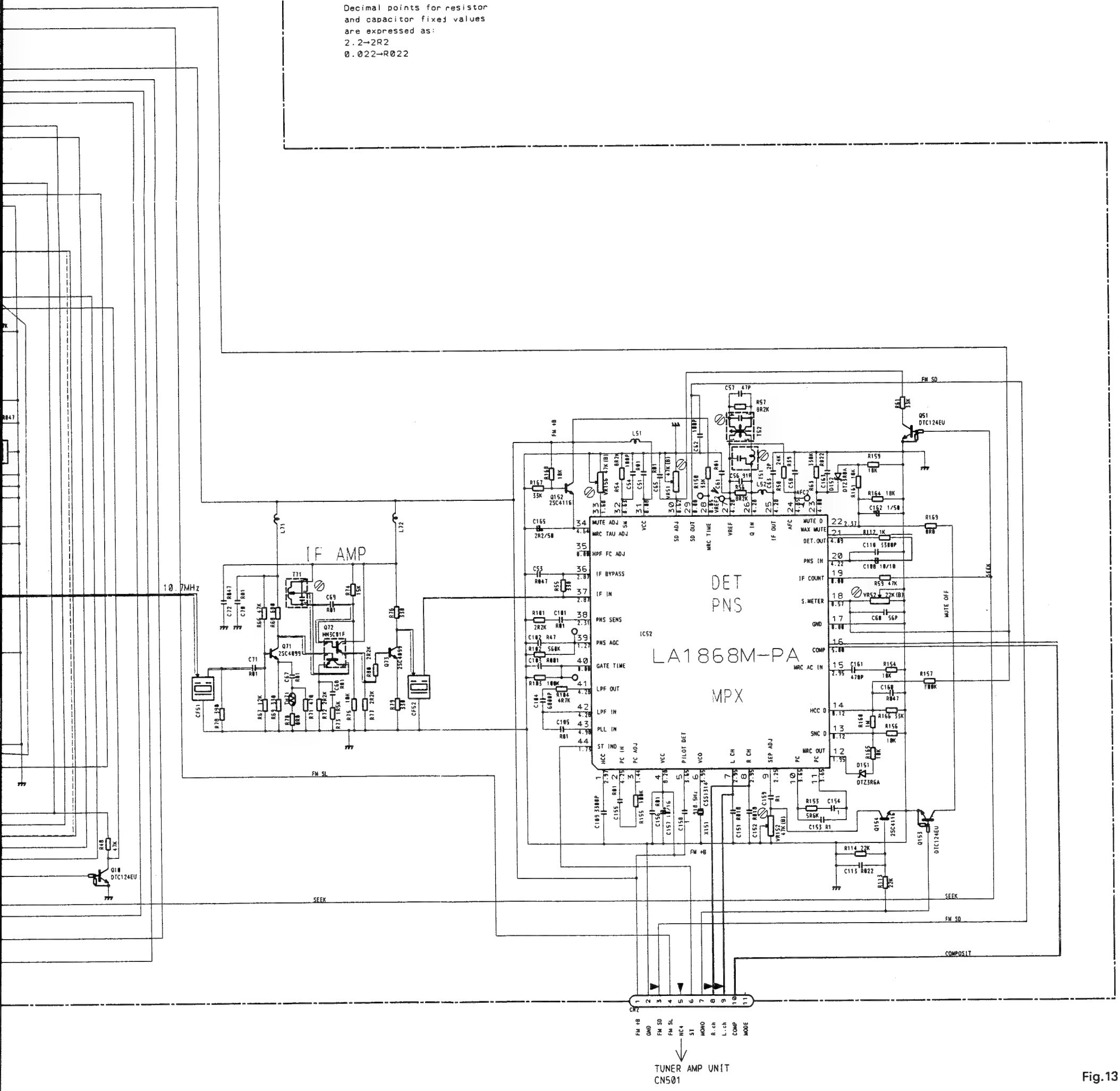
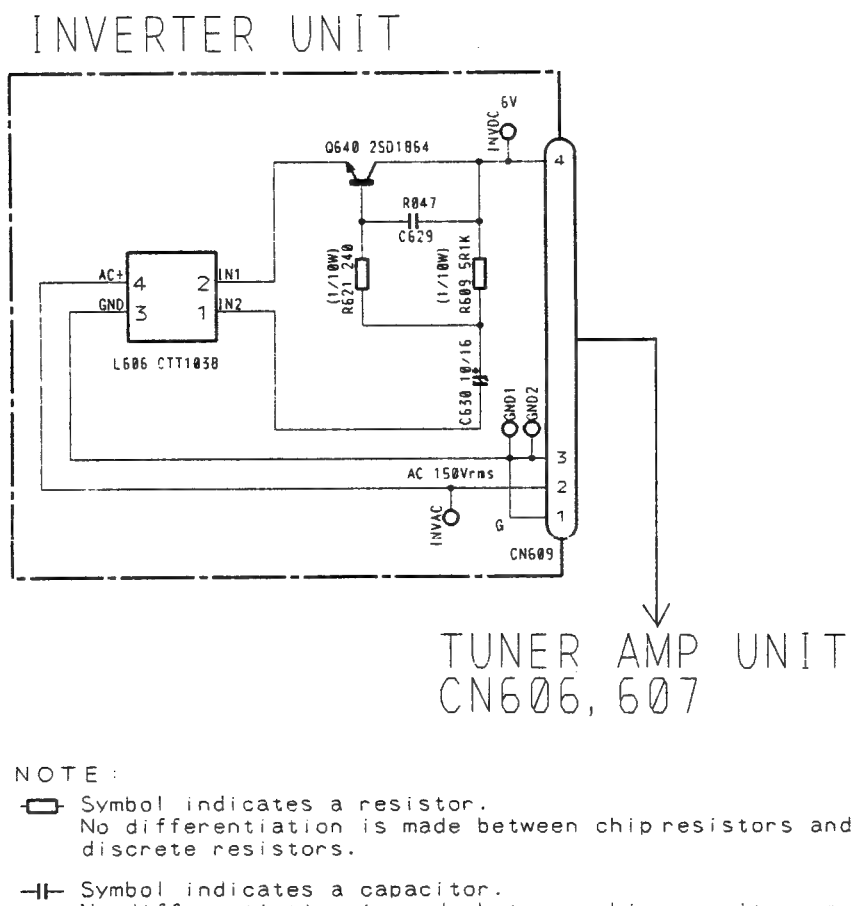


Fig.13

9.3 INVERTER UNIT

● **Circuit Diagram**



NOTE :

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig.14

● **Connection Diagram**

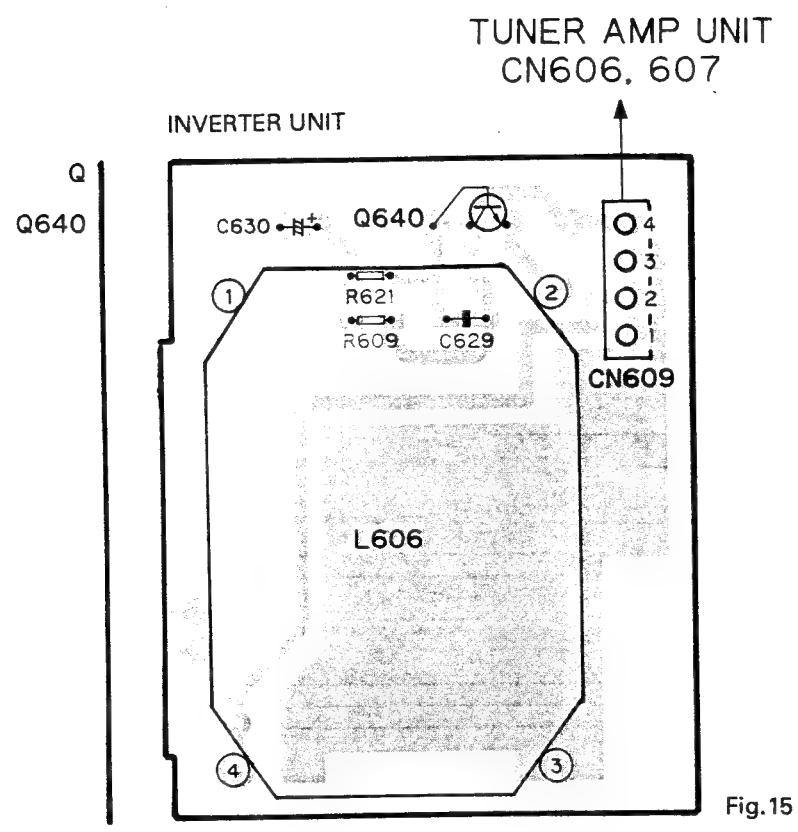


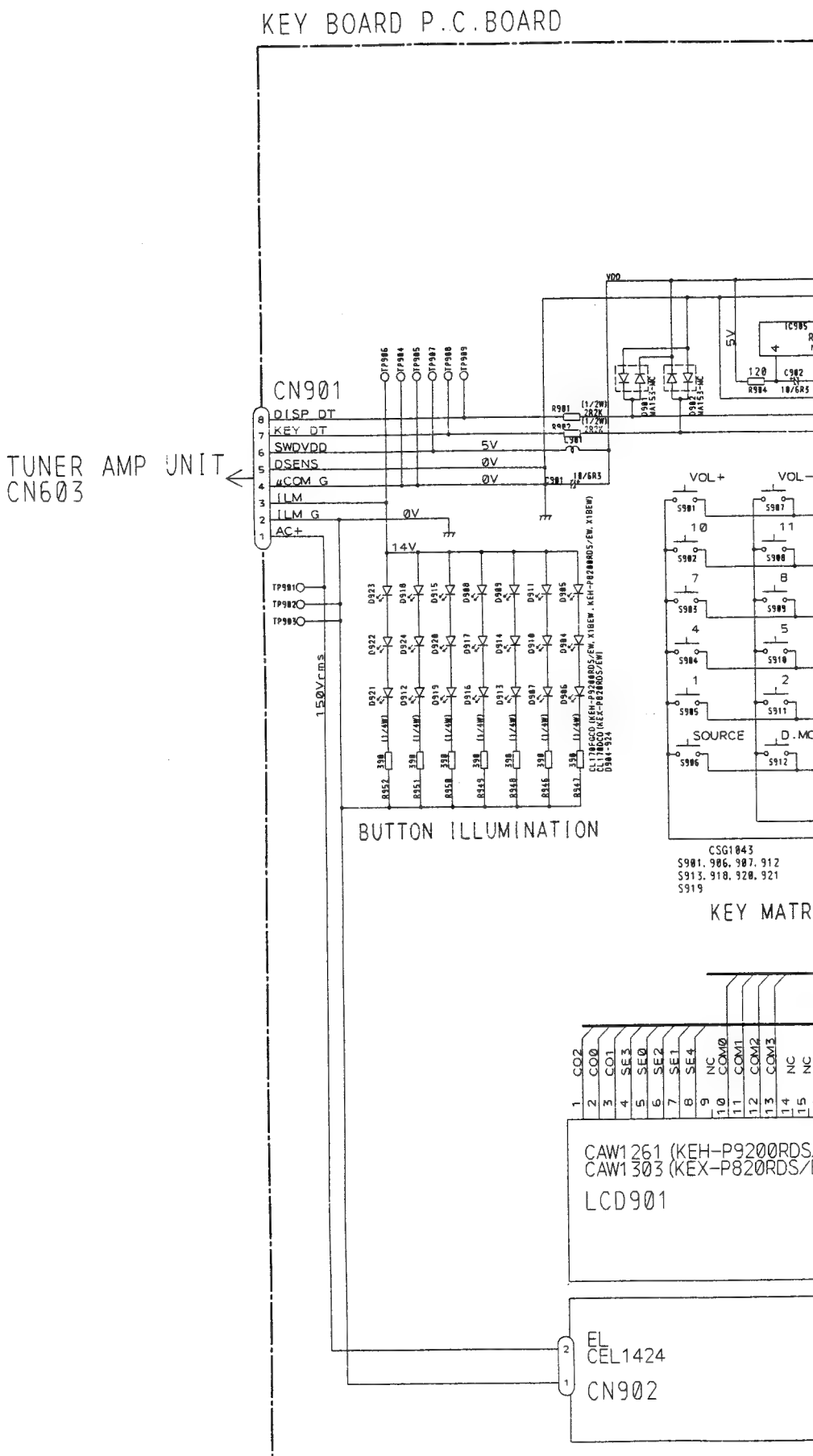
Fig.15

NOTE:

The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

9.4 KEY BOARD UNIT

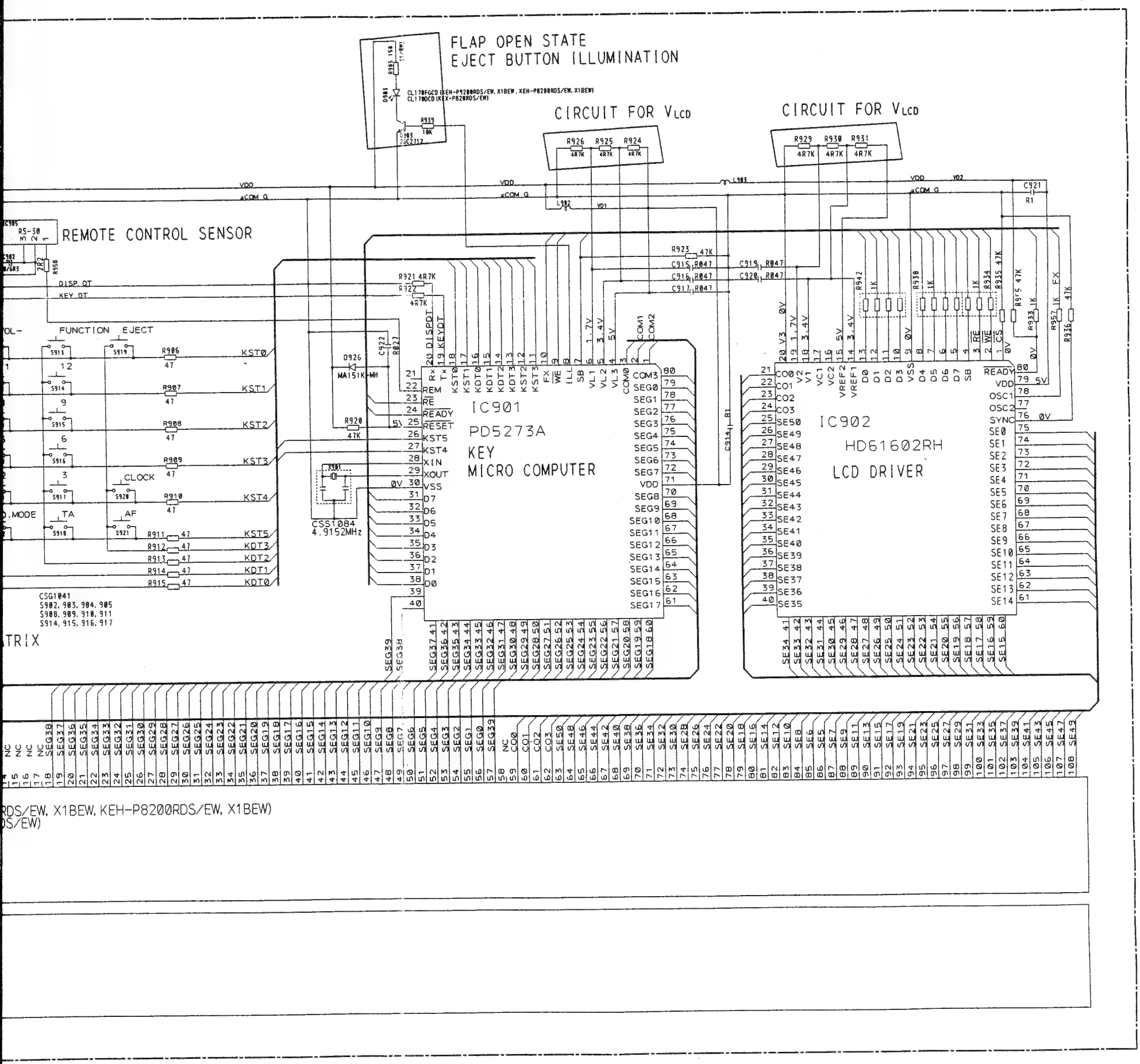
● **Circuit Diagram**



NOTE :

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.



Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

KEY BOARD UNIT
Consists of ·KEY BOARD P.C.BOARD ·SWITCH P.C.BOARD

Fig.16

Connection Diagram

KEY BOARD P.C.BOARD

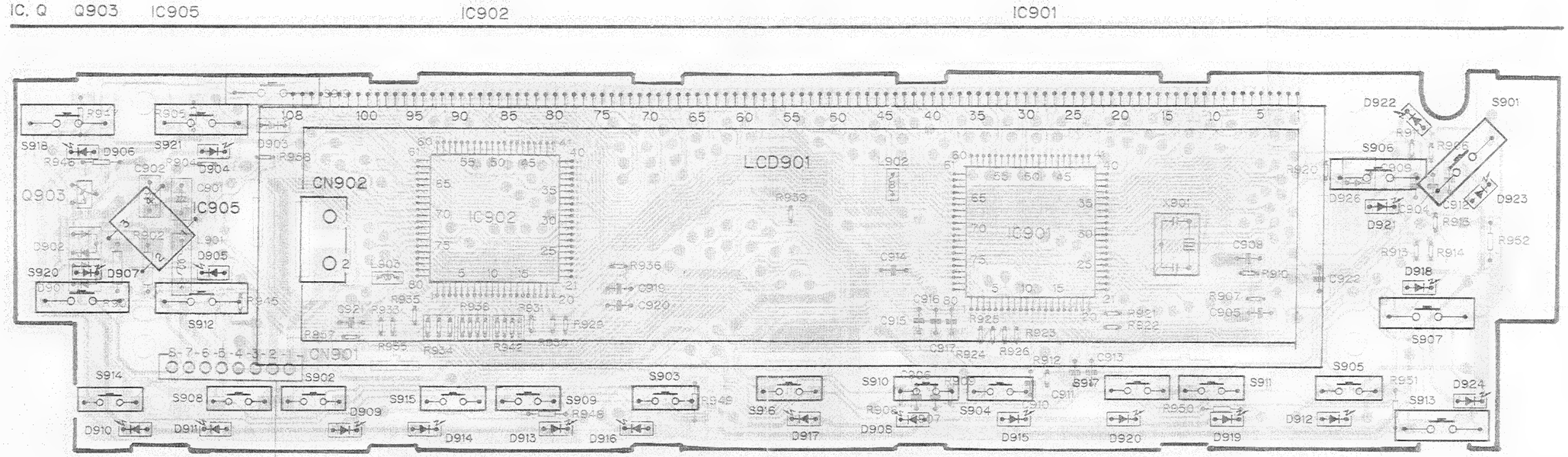


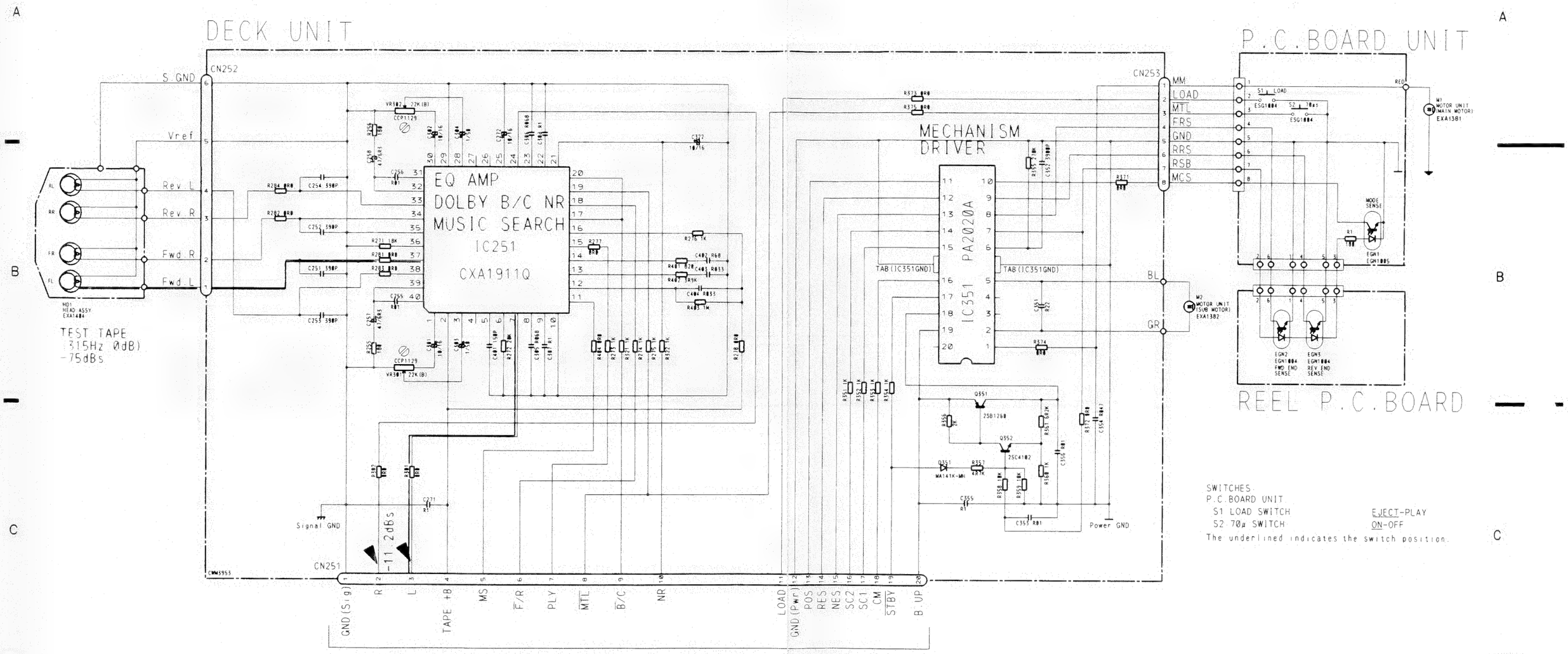
Fig.17

NOTE:

The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

9.5 CASSETTE MECHANISM MODULE(KEH-P9200RDS/EW, X1BEW, KEH-P8200RDS/EW, X1BEW)

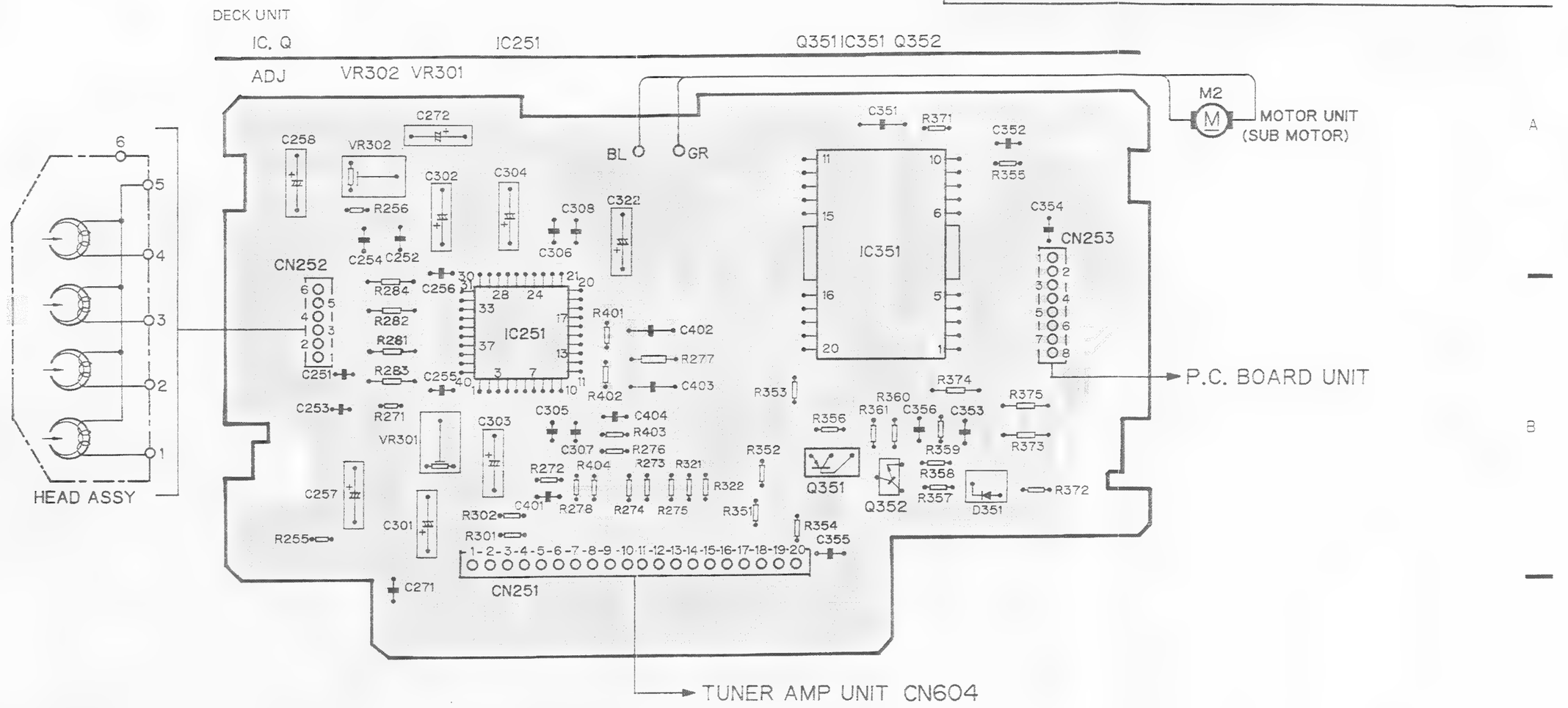
● Circuit Diagram

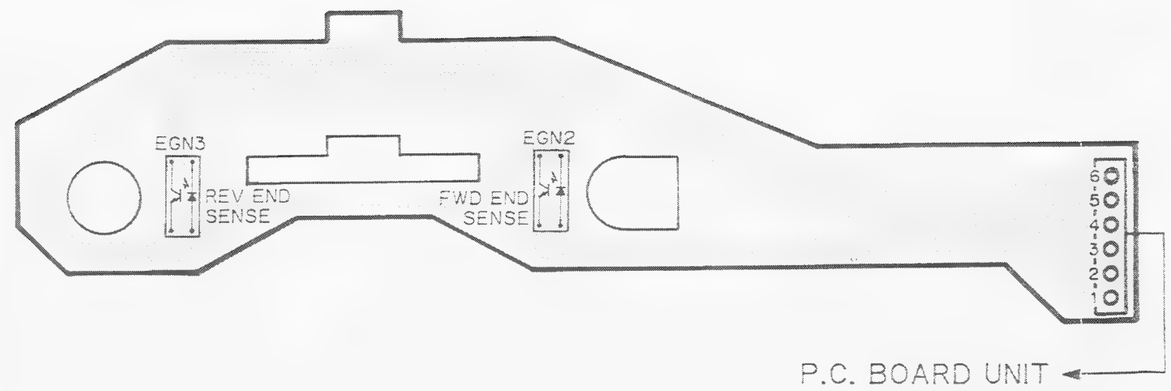


SWITCHES
P.C.BOARD UNIT
S1 LOAD SWITCH EJECT-PLAY
S2 70μ SWITCH ON-OFF
The underlined indicates the switch position.

Fig.18

Connection Diagram





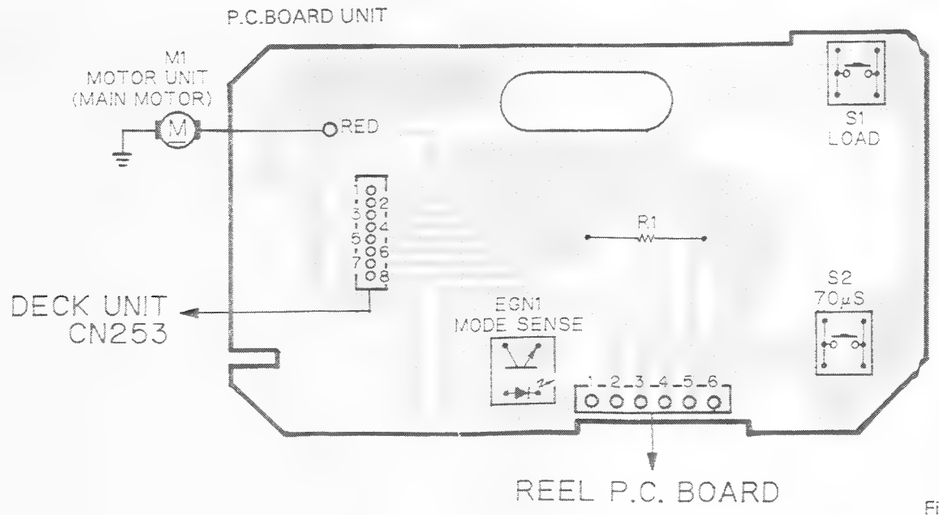
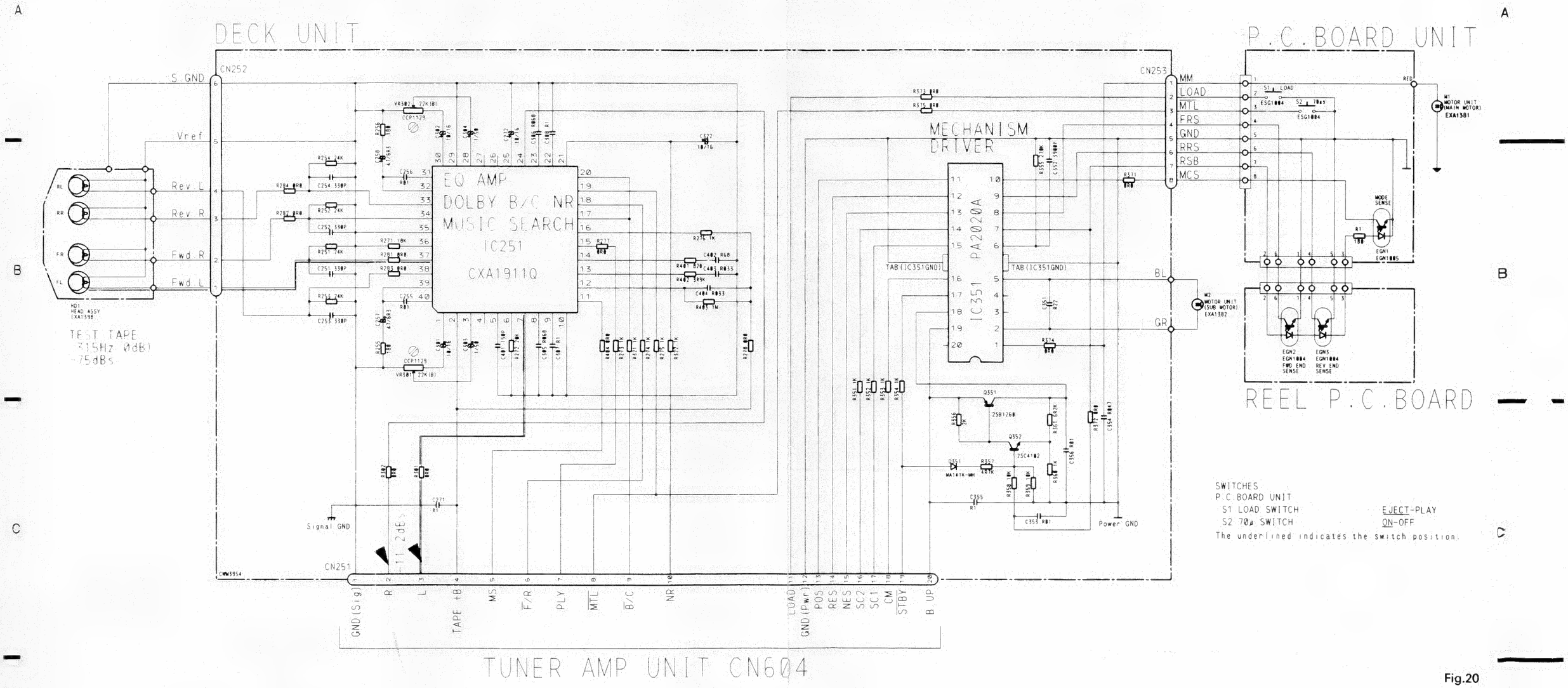


Fig.19

9.6 CASSETTE MECHANISM MODULE(KEX-P820RDS/EW)

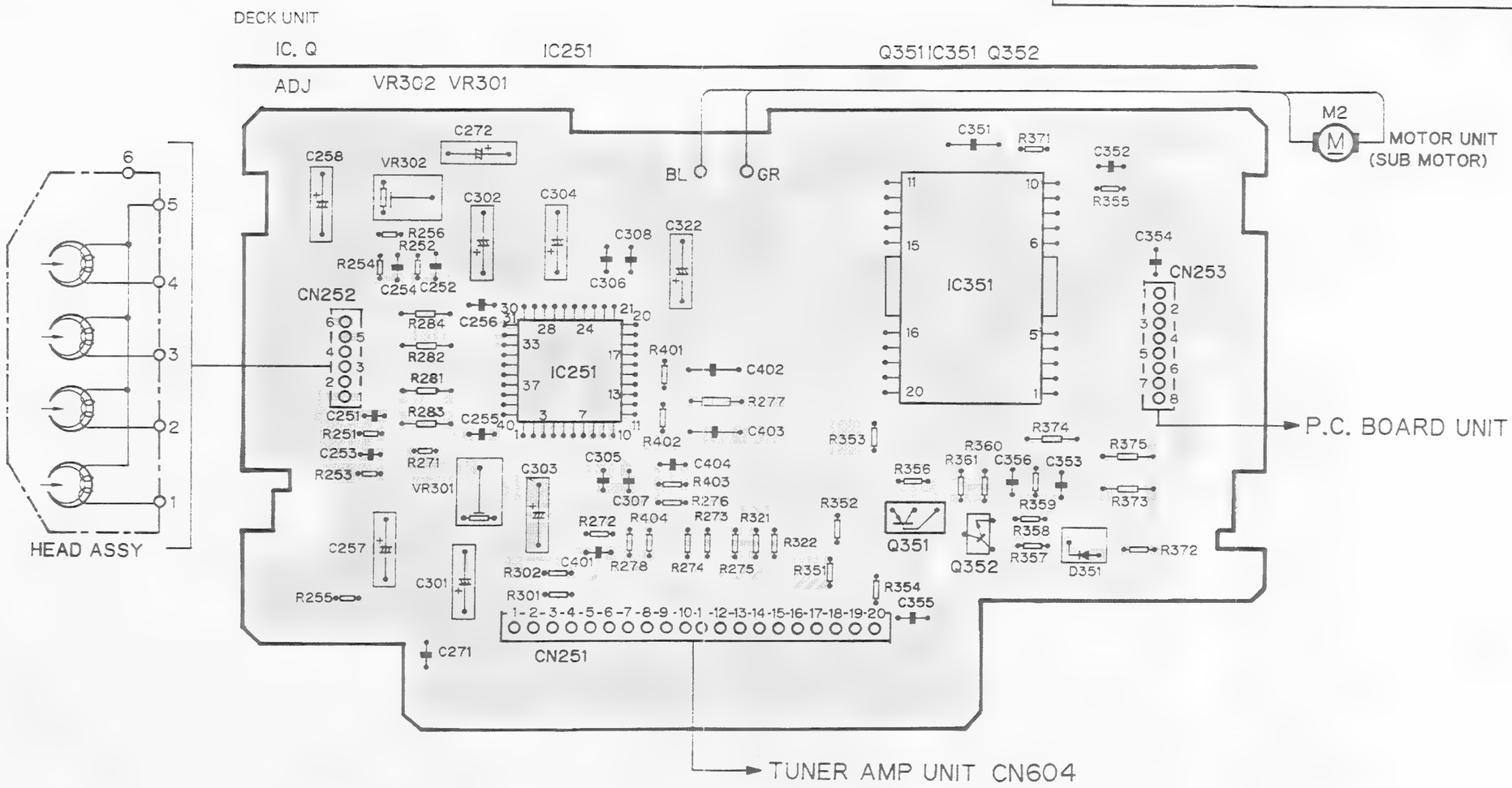
● **Circuit Diagram**

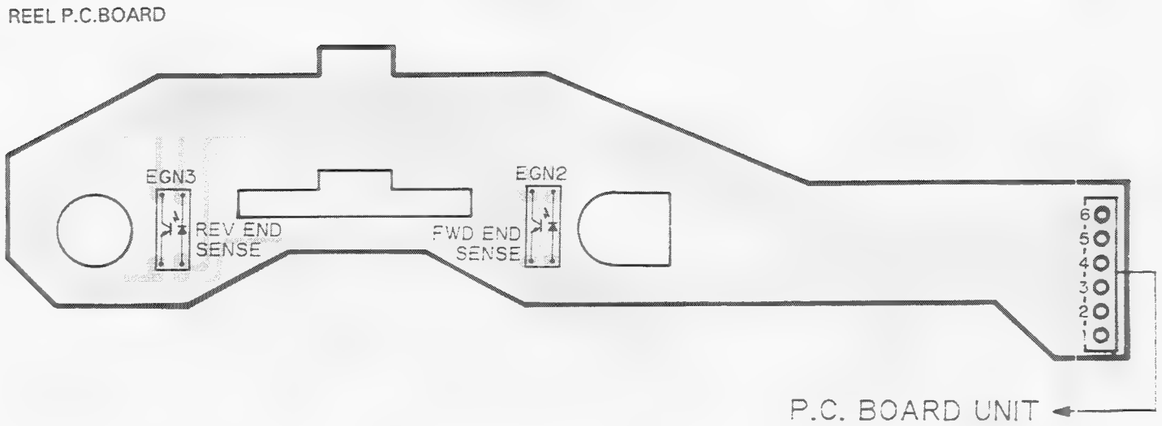


SWITCHES
P.C.BOARD UNIT
S1 LOAD SWITCH : EJECT-PLAY
S2 70μ SWITCH : ON-OFF
The underlined indicates the switch position.

Fig.20

● Connection Diagram





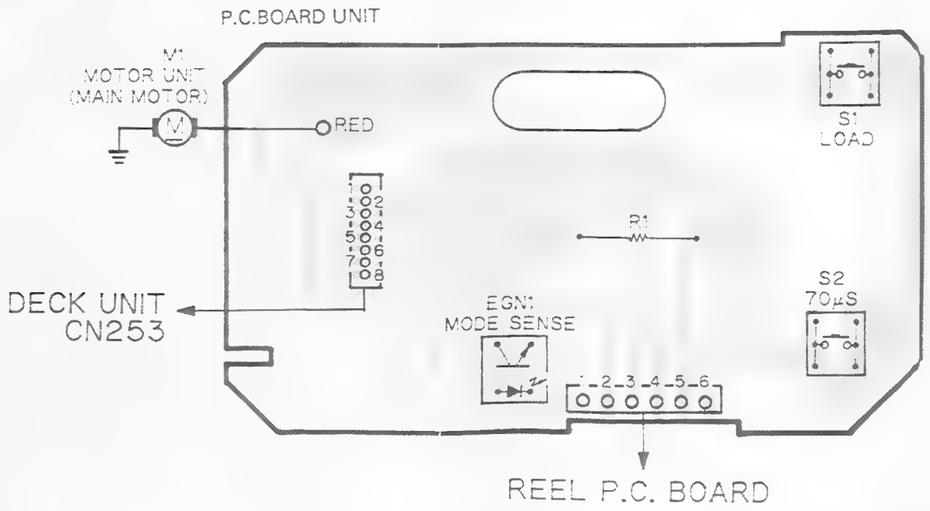


Fig.21

10. EXPLODED VIEW

10.1 CHASSIS

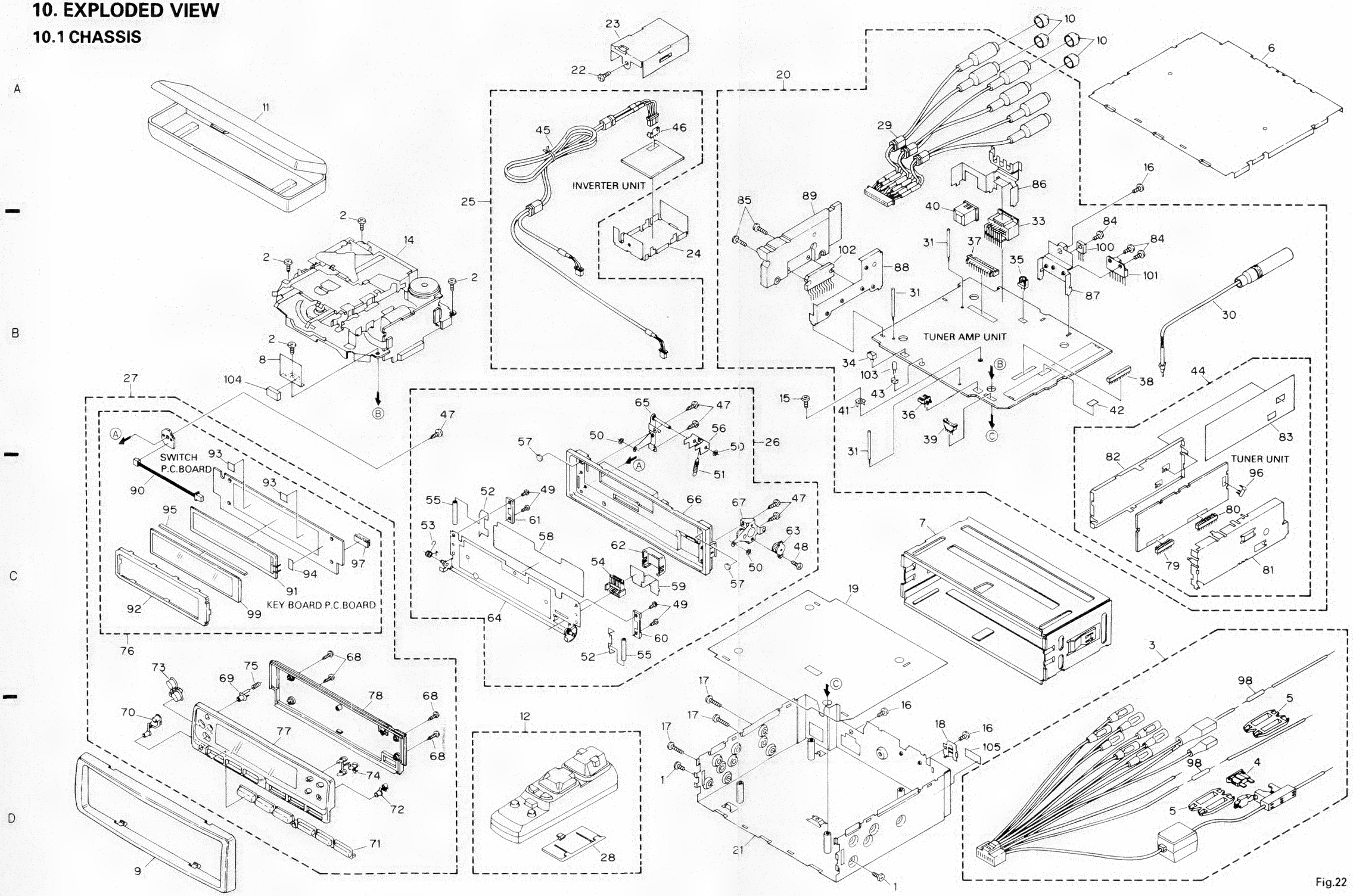


Fig.22

NOTE:

- Parts marked by "✱"are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by "◉"are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

● Parts List(KEH-P9200RDS/EW)

Mark	No.	Description	Part No.
	1	Screw	BMZ30P040FMC
	2	Screw	BSZ26P050FMC
	3	Cord Assy	CDE4648
	4	Fuse	CEK1136
	5	Cap	CNS1472
	6	Case	CNB1831
	7	Holder	CNC4946
	8	Holder	CNC5734
	9	Panel	CNS3113
	10	Cap	CNV2680
	11	Case Assy	CXA7194
	12	Remote Control Assy	CXA7607
	13	•••••	
	14	Cassette Mechanism Module	EXK3130
	15	Screw	BSZ30P055FUC
	16	Screw	BSZ30P060FMC
	17	Screw	BSZ30P160FMC
	18	Holder	CNC4963
	19	Insulator	CNM4300
	20	Tuner Amp Unit	CWM4038
	21	Chassis Unit	CXA7163
	22	Screw	BSZ26P050FMC
	23	Holder	CNC5735
	24	Holder	CNC5736
	25	Inverter Unit	CWM4219
	26	Panel Assy	CXA6691
	27	Detach Grille Assy	CXA6701
	28	Cover	CNS3477
	29	Cord	CDE4382
	30	Antenna Cable	CDH1180
	31	Clamper	CEF1005
	32	•••••	
	33	Plug(16P)(CN601)	CKM1187
	34	Plug(2P)(CN605)	CKS-783
	35	Plug(2P)(CN607)	CKS1222
	36	Plug(2P)(CN606)	CKS1236
	37	Plug(12P)(CN801)	CKS1246
	38	Connector(20P)(CN604)	CKS1730
	39	Connector(9P)(CN603)	CKS2239
	40	Connector(11P)(CN602)	CKS2480

Mark	No.	Description	Part No.
	41	Holder	CNC2218
✱	42	Spacer	CNM2158
	43	Holder	CNV1906
	44	Tuner Unit	CWE1356
	45	Cord	CDE4544
	46	Plug(4P)(CN609)	CKS1224
	47	Screw	BPZ20P050FMC
	48	Screw(M2×3)	CBA1077
	49	Screw(M2×3)	CBA1082
	50	Washer	CBF1039
	51	Spring	CBH1395
	52	Spring	CBH1528
	53	Spring	CBH1660
	54	Connector(8P)(CN940)	CKS2780
	55	Roller	CLA2041
	56	Arm	CNC5495
	57	Cushion	CNM2247
	58	Sheet	CNM4179
	59	P.C.Board	CNP3772
	60	Holder	CNV2141
	61	Holder	CNV3964
	62	Cover	CNV3965
	63	Damper Unit	CXA7159
	64	Holder Unit	CXA7958
	65	Holder Unit	CXA7161
	66	Panel Unit	CXA7170
	67	Holder Unit	CXA7793
	68	Screw	BPZ20P080FZK
	69	Button	CAC4062
	70	Button	CAC4064
	71	Button	CAC4065
	72	Button	CAC4066
	73	Button	CAC4381
	74	Button	CAC4382
	75	Spring	CBH1661
	76	Key Board Unit	CWM4046
	77	Grille Unit	CXA7166
	78	Cover Unit	CXA7172
	79	Plug(11P)(CN2)	CKS1619
	80	Plug(12P)(CN1)	CKS1620

Mark	No.	Description	Part No.
	81	Holder	CNC5358
	82	Holder	CNC5432
	83	Insulator	CNM4046
	84	Screw	BSZ30P080FMC
	85	Screw	BSZ30P120FMC
	86	Holder	CNC5490
	87	Holder	CNC5491
	88	Holder	CNC5530
	89	Heat Sink	CNR1342
	90	Cord	CDE4387
	91	EL	CEL1424
	92	Holder	CNC5497
	93	Film	CNM4349
	94	Spacer	CNM4359
	95	Rubber	CNV3967
	96	Antenna Jack(ANT1)	CKX1010
	97	Connector(8P)(CN901)	CKS2733
	98	Resistor	RS1/2P102JL
	99	LCD(LCD901)	CAW1261
	100	Transistor(Q601)	2SD1189
	101	IC(IC604)	PA2024A
	102	IC(IC551)	PAL003A
	103	Lamp(IL601)	CEL1263
	104	Cushion	CNM2657
	105	•••••	

Mark No.	Description	Part No.
81	Holder	CNC5358
82	Holder	CNC5432
83	Insulator	CNM4046
84	Screw	BSZ30P080FMC
85	Screw	BSZ30P120FMC
86	Holder	CNC5490
87	Holder	CNC5491
88	Holder	CNC5530
89	Heat Sink	CNR1342
90	Cord	CDE4387
91	EL	CEL1424
92	Holder	CNC5497
93	Film	CNM4349
94	Spacer	CNM4359
95	Rubber	CNV3967
96	Antenna Jack(ANT1)	CKX1010
97	Connector(8P)(CN901)	CKS2733
98	Resistor	RS1/2P102JL
99	LCD(LCD901)	CAW1261
100	Transistor(Q601)	2SD1189
101	IC(IC604)	PA2024A
102	IC(IC551)	PAL003A
103	Lamp(IL601)	CEL1263
104	Cushion	CNM2657
105	•••••	

• The KEH-P9200RDS/X1BEW, KEH-P8200RDS/EW, X1BEW and KEX-P820RDS/EW Parts Lists enumerate the parts which differ from those enumerated in the KEH-P9200RDS/EW Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The KEH-P9200RDS/EW Parts List is given on page 65.

Mark No.	Description	KEH-P9200RDS/EW Part No.	KEH-P8200RDS/EW Part No.
10	Cap	CNV2680	•••••
12	Remote Control Assy	CXA7607	CXA7608
20	Tuner Amp Unit	CWM4038	CWM4042
21	Chassis Unit	CXA7163	CXA7443
27	Detach Grille Assy	CXA6701	CXA6706
29	Cord	CDE4382	CDE4383
44	Tuner Unit	CWE1356	CWE1357
77	Grille Unit	CXA7166	CXA7574
79	Plug	CKS1619(11P)(CN2)	CKS1607(10P)(CN2)
105	Insulator	•••••	CNM4445

Mark No.	Description	KEH-P9200RDS/EW Part No.	KEX-P820RDS/EW Part No.
3	Cord Assy	CDE4648	CDE4650
4	Fuse	CEK1136	CEK1001
9	Panel	CNS3113	CNS3399
10	Cap	CNV2680	•••••
12	Remote Control Assy	CXA7607	CXA7609
14	Cassette Mechanism Module	EXK3130	EXK3170
17	Screw	BSZ30P160FMC	•••••
20	Tuner Amp Unit	CWM4038	CWM4279
21	Chassis Unit	CXA7163	CXA7444
26	Panel Assy	CXA6691	CXA6694
27	Detach Grille Assy	CXA6701	CXA6696
28	Cover	CNS3477	CNS3476
29	Cord	CDE4382	CDE4545
44	Tuner Unit	CWE1356	CWE1357
66	Panel Unit	CXA7170	CXA7445
71	Button	CAC4065	CAC4253
76	Key Board Unit	CWM4046	CWM4050
77	Grille Unit	CXA7166	CXA7578
78	Cover Unit	CXA7172	CXA7446
79	Plug	CKS1619(11P)(CN2)	CKS1607(10P)(CN2)
85	Screw	BSZ30P120FMC	•••••
88	Holder	CNC5530	•••••
89	Heat Sink	CNR1342	•••••
99	LCD(LCD901)	CAW1261	CAW1303
102	IC(IC551)	PAL003A	•••••
105	Insulator	•••••	CNM4445

Mark No.	Description	KEH-P9200RDS/EW Part No.	KEH-P9200RDS/X1BEV Part No.
3	Cord Assy	CDE4648	UDE4648

Mark No.	Description	KEH-P8200RDS/EW Part No.	KEH-P8200RDS/X1BEV Part No.
3	Cord Assy	CDE4648	UDE4648

10.2 CASSETTE MECHANISM MODULE

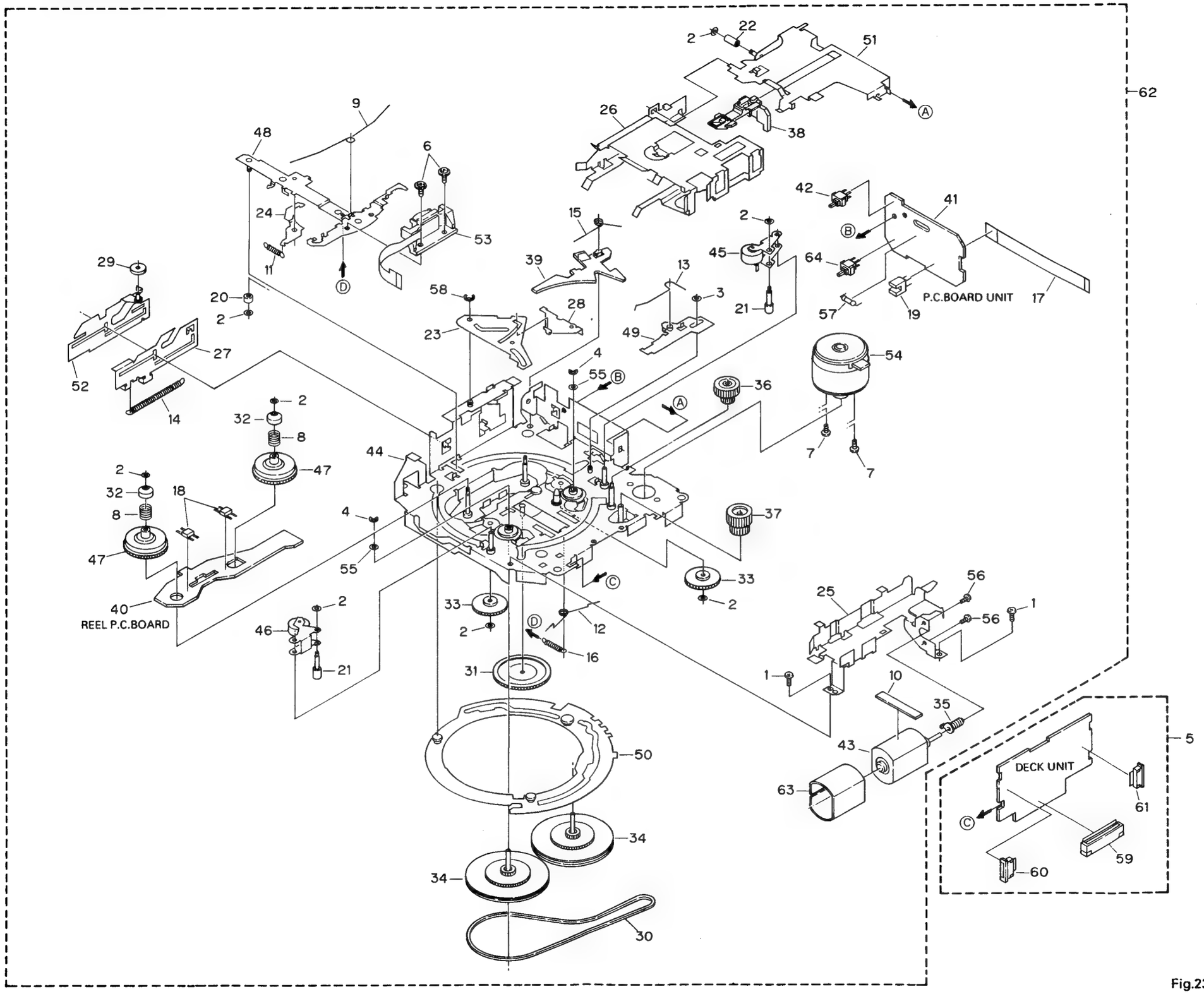


Fig.23

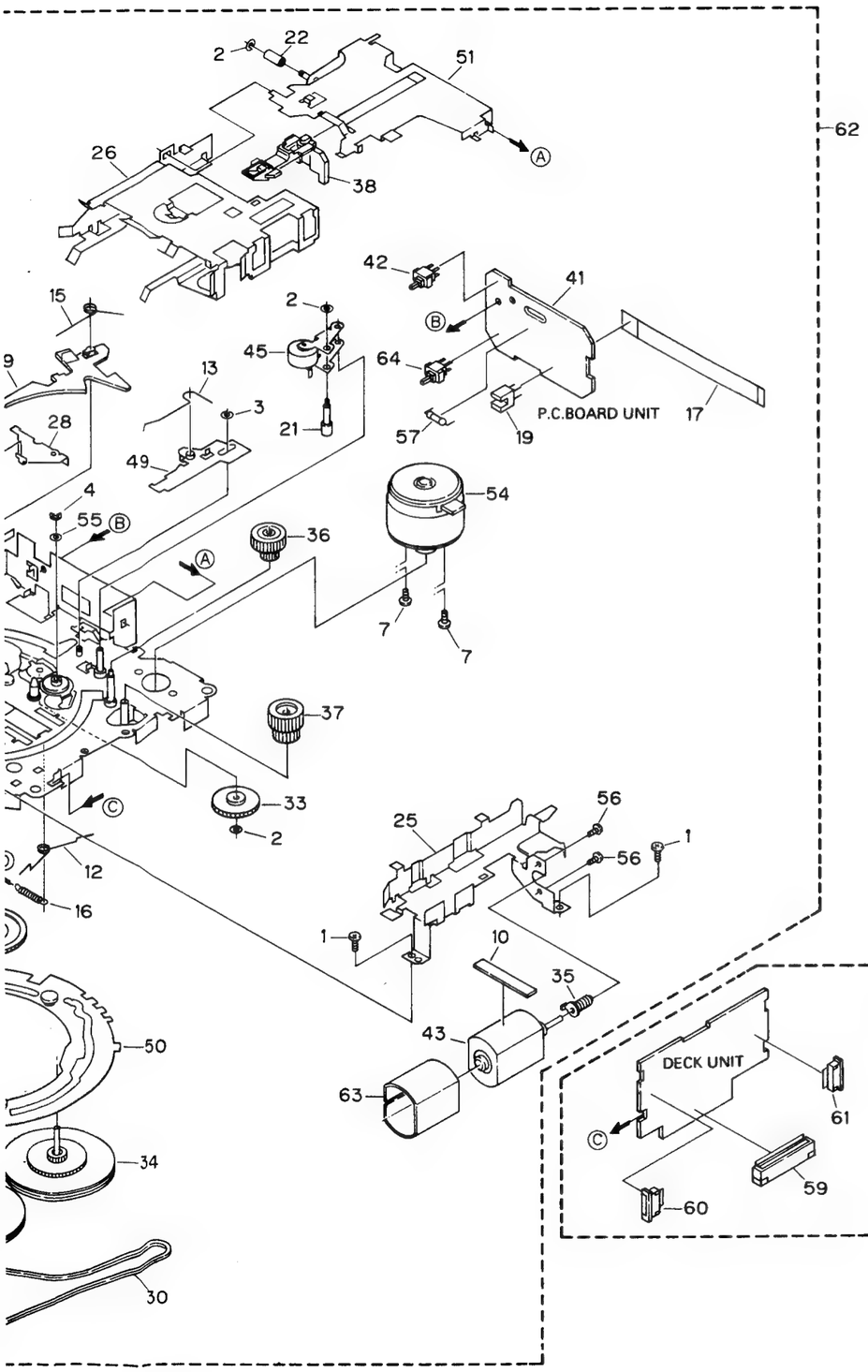


Fig.23

● Parts List(KEH-P9200RDS/EW, X1BEW, KEH-P8200RDS/EW, X1BEW)

Mark	No.	Description	Part No.
	1	Screw	BSZ20P040FMC
A	2	Washer	CBF1037
	3	Washer	CBF1038
	4	Washer	CBG1003
	5	Deck Unit	CWM3953
	6	Screw	EBA1028
	7	Screw	EBA1037
	8	Spring	EBH1531
	9	Spring	EBH1512
—	10	Cushion	ENM1034
	11	Spring	EBH1515
	12	Spring	EBH1516
	13	Spring	EBH1517
	14	Spring	EBH1518
	15	Spring	EBH1519
	16	Spring	EBH1537
B	17	Cord	EDD1015
	18	Photo-reflector(EGN2,3)	EGN1004
	19	Photo-interrupter(EGN1)	EGN1005
	20	Roller	ELA1283
	21	Shaft	ELA1347
	22	Roller	ELA1348
	23	Arm	ENC1396
—	24	Arm	ENC1397
	25	Guide	ENC1398
	26	Holder	ENC1399
	27	Lever	ENC1400
	28	Arm	ENC1401
	29	Roller	ENR1027
	30	Belt	ENT1027
	31	Gear	ENV1347
C	32	Collar	ENV1349
	33	Gear	ENV1350
	34	Flywheel	ENV1410
	35	Worm Gear	ENV1439
—			
	36	Worm Wheel	ENV1440
	37	Gear	ENR1028
	38	Lever	ENV1442
	39	Arm	ENV1445
	40	Gathering P.C.Board	ENX1029
	41	Gathering P.C.Board	ENX1030
	42	Switch(S1)	ESG1004
	43	Motor Unit(M2)	EXA1382
	44	Chassis Unit	EXA1383
	45	Pinch Holder Unit	EXA1384
	46	Pinch Holder Unit	EXA1385
	47	Reel Unit	EXA1386
	48	Head Base Unit	EXA1387
	49	Lever Unit	EXA1388
	50	Gear Unit	EXA1389
	51	Frame Unit	EXA1390
	52	Lever Unit	EXA1391
	53	Head Assy(HD1)	EXA1404
	54	Motor Unit(M1)	EXA1381
	55	Washer	HBF-179
	56	Screw	JGZ20P025FNI
	57	Resistor(R1)	RD1/4HM181J
	58	Washer	YE20FUC
	59	Connector(CN251)	CKS1711
	60	Connector(CN252)	CKS2127
	61	Connector(CN253)	CKS2129
	62	Spare Unit	EXA3003
	63	Shield	ENC1410
	64	Switch(S2)	ESG1004

D

● Parts List(KEX-P820RDS/EW)

Mark No.	Description	Part No.
1	Screw	BSZ20P040FMC
2	Washer	CBF1037
3	Washer	CBF1038
4	Washer	CBG1003
5	Deck Unit	CWM3954
6	Screw	EBA1028
7	Screw	EBA1037
8	Spring	EBH1531
9	Spring	EBH1512
10	Cushion	ENM1034
11	Spring	EBH1515
12	Spring	EBH1516
13	Spring	EBH1517
14	Spring	EBH1518
15	Spring	EBH1519
16	Spring	EBH1537
17	Cord	EDD1015
18	Photo-reflector(EGN2,3)	EGN1004
19	Photo-interrupter(EGN1)	EGN1005
20	Roller	ELA1283
21	Shaft	ELA1347
22	Roller	ELA1348
23	Arm	ENC1396
24	Arm	ENC1397
25	Guide	ENC1398
26	Holder	ENC1399
27	Lever	ENC1400
28	Arm	ENC1401
29	Roller	ENR1027
30	Belt	ENT1027
31	Gear	ENV1347
32	Collar	ENV1349
33	Gear	ENV1350
34	Flywheel	ENV1410
35	Worm Gear	ENV1439
36	Worm Wheel	ENV1440
37	Gear	ENR1028
38	Lever	ENV1442
39	Arm	ENV1445
40	Gathering P.C.Board	ENX1029
41	Gathering P.C.Board	ENX1030
42	Switch(S1)	ESG1004
43	Motor Unit(M2)	EXA1382
44	Chassis Unit	EXA1383
45	Pinch Holder Unit	EXA1384
46	Pinch Holder Unit	EXA1385
47	Reel Unit	EXA1386
48	Head Base Unit	EXA1387
49	Lever Unit	EXA1388
50	Gear Unit	EXA1389
51	Frame Unit	EXA1390
52	Lever Unit	EXA1391
53	Head Assy(HD1)	EXA1398
54	Motor Unit(M1)	EXA1381
55	Washer	HBF-179
56	Screw	JGZ20P025FNI
57	Resistor(R1)	RD1/4HM181J
58	Washer	YE20FUC
59	Connector(CN251)	CKS1711
60	Connector(CN252)	CKS2127
61	Connector(CN253)	CKS2129
62	Spare Unit	EXA3002
63	Shield	ENC1410
64	Switch(S2)	ESG1004

11. PACKING METHOD

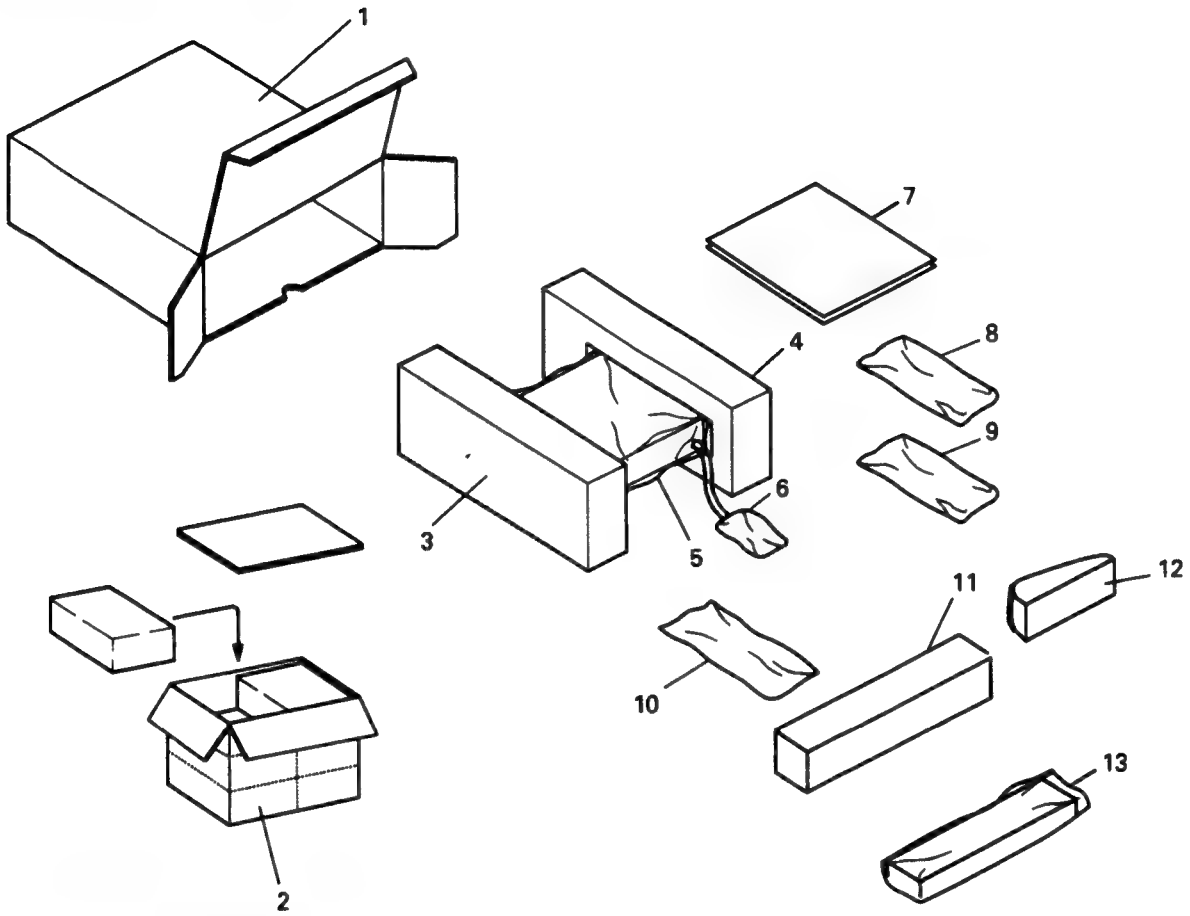


Fig.24

● **Parts List(KEH-P9200RDS/EW)**

* : Non Spare Part

Mark No.	Description	Part No.
1	Carton	CHG2575
2	Contain Box	CHL2575
3	Protector	CHP1688
4	Protector	CHP1687
5	Cover	CEG1092
6	Air Cushioned Bag	CEG1192
7-1	Owner's Manual	CRD1809
7-2	Owner's Manual	CRD1810
7-3	Installation Manual	CRD1812
7-4	Installation Manual	CRD1880
* 7-5	Passport	CRY1013
* 7-6	Warranty Card	CRY1071
8	Accessory Assy	CEA2065
9	Accessory Assy	CEA2081
10	Cord Assy	CDE4648
11	Spacer	CHW1433
12	Remote Control Assy	CXA7607
13	Case Assy	CXA7194

• The KEH-P9200RDS/X1BEW, KEH-P8200RDS/EW, X1BEW and KEX-P820RDS/EW Parts Lists enumerate the parts which differ from those enumerated in the KEH-P9200RDS/EW Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The KEH-P9200RDS/EW Parts List is given on page 72.

Mark No. Description	KEH-P9200RDS/EW Part No.	KEH-P8200RDS/EW Part No.	KEX-P820RDS/EW Part No.
1 Carton	CHG2575	CHG2595	CHG2598
2 Contain Box	CHL2575	CHL2595	CHL2598
7-3 Installation Manual	CRD1812	CRD1881	CRD1816
7-4 Installation Manual	CRD1880	CRD1882	CRD1883
10 Cord Assy	CDE4648	CDE4648	CDE4650
12 Remote Control Assy	CXA7607	CXA7608	CXA7609

Mark No. Description	KEH-P9200RDS/EW Part No.	KEH-P9200RDS/X1BEW Part No.	KEH-P8200RDS/X1BEW Part No.
1 Carton	CHG2575	UHG2575	UHG2595
2 Contain Box	CHL2575	UHD-002	UHD-002
3 Protector	CHP1688	UHP-009	UHP-009
4 Protector	CHP1687	•••••	•••••
5 Cover	CEG1092	•••••	•••••
Polyethylene Bag	•••••	UEG-002	UEG-002
7-1 Owner's Manual	CRD1809	URD1809	URD1809
7-2 Owner's Manual	CRD1810	•••••	•••••
7-3 Installation Manual	CRD1812	URD1812	URD1881
7-4 Installation Manual	CRD1880	•••••	•••••
* 7-5 Passport	CRY1013	CRY1014	CRY1014
* 7-6 Warranty Card	CRY1071	•••••	•••••
* Card	•••••	URY-001	URY-001
8 Accessory Assy	CEA2065	UEA2065	UEA2065
9 Accessory Assy	CEA2081	UEA2081	UEA2081
10 Cord Assy	CDE4648	UDE4648	UDE4648
11 Spacer	CHW1433	•••••	•••••
12 Remote Control Assy	CXA7607	CXA7607	CXA7608
Air Cushioned Bag	•••••	UEG-007	UEG-007

● **Owner's Manual**

● **Installation Manual**

Model	Part No.	Language
KEH-P9200RDS/EW	CRD1809	English, Italian, French, German, Dutch, Spanish
KEH-P8200RDS/EW KEX-P820RDS/EW	CRD1810	Finnish, Norwegian, Swedish
KEH-P9200RDS/EW	CRD1812	English, Italian, French, German, Dutch, Spanish
	CRD1880	Finnish, Norwegian, Swedish
KEH-P8200RDS/EW	CRD1881	English, Italian, French, German, Dutch, Spanish
	CRD1882	Finnish, Norwegian, Swedish
KEX-P820RDS/EW	CRD1816	English, Italian, French, German, Dutch, Spanish
	CRD1883	Finnish, Norwegian, Swedish
KEH-P9200RDS/X1BEW KEH-P8200RDS/X1BEW	URD1809	English, Italian, French, German, Dutch, Spanish
KEH-P9200RDS/X1BEW	URD1812	English, Italian, French, German, Dutch, Spanish
KEH-P8200RDS/X1BEW	URD1881	English, Italian, French, German, Dutch, Spanish

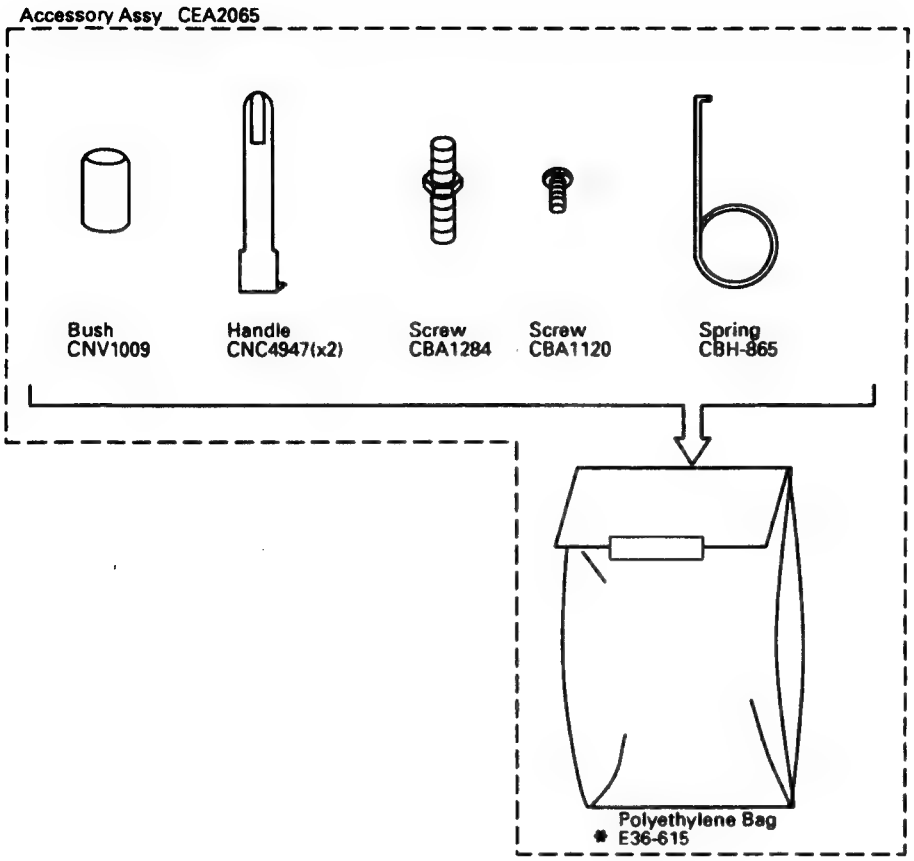

Accessory Assy CEA2065
Bush
CNV1009
Handle
CNC4947(x2)
Screw
CBA1284
Screw
CBA1120
Spring
CBH-865
Polyethylene Bag
* E36-615

Fig.25

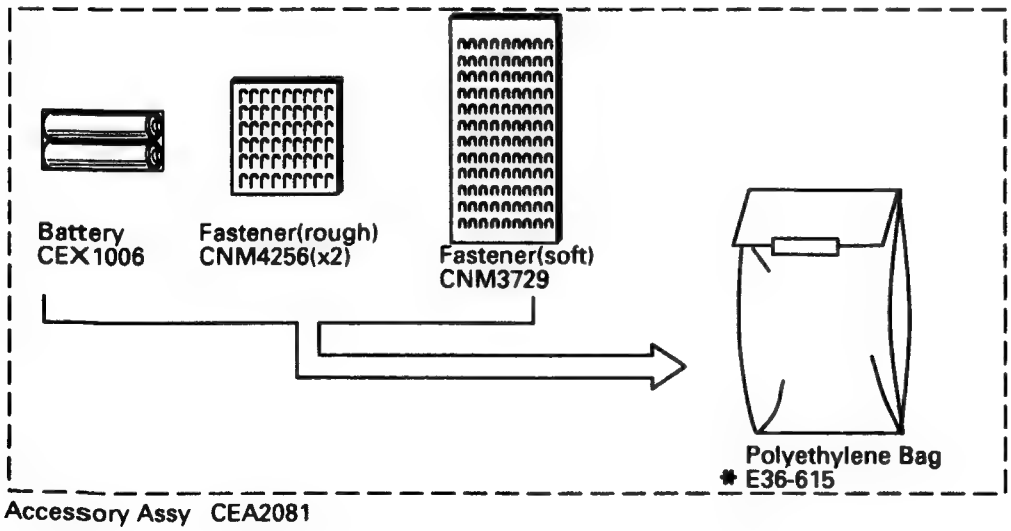

Battery
CEX1006
Fastener(rough)
CNM4256(x2)
Fastener(soft)
CNM3729
Polyethylene Bag
* E36-615
Accessory Assy CEA2081

Fig.26

12. SPECIFICATIONS

General

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Max. current consumption
(KEH-P9200RDS, KEH-P8200RDS) ..... 8.0 A
(KEX-P820RDS) ..... 1.0 A
Dimensions (chassis) ..... 178 (W) × 50 (H) × 150 (D) mm
(front face) ..... 188 (W) × 58 (H) × 16 (D) mm
Weight
(KEH-P9200RDS, KEH-P8200RDS) ..... 1.4 kg
(KEX-P820RDS) ..... 1.2 kg

Amplifier (KEH-P9200RDS, KEH-P8200RDS)

Maximum power output ..... 35 W × 4 (EIAJ)
Continuous power output ..... 22 W × 4 (DIN45324, +B = 14.4 V)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance ..... 500 mV/ 1 kΩ
Tone controls (bass) ..... ±12 dB (100 Hz)
(treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz)
(Volume: –30 dB)

Amplifier (KEX-P820RDS)

Preout output level/output impedance ..... 500 mV/ 1 kΩ
Tone controls (bass) ..... ±12 dB (100 Hz)
(treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100Hz), +7 dB (10 kHz)
(Volume: –30 dB)

Subwoofer

Crossover frequency ..... 50 Hz/ 80 Hz/ 125 Hz
Crossover slope ..... –12 dB/oct

Tape player

Tape ..... Compact cassette tape (C-30 — C-90)
Tape speed ..... 4.76 cm/sec. (+0.14 cm/sec., -0.05 cm/sec.)
Fast forward/rewind time ..... Approx. 100 sec. for C-60
Wow & flutter ..... 0.09 % (WRMS)
Frequency response
(KEH-P9200RDS, KEH-P8200RDS)
..... Metal: 30 — 19,000 Hz (±3 dB)
(KEX-P820RDS) ..... Metal: 25 — 22,000 Hz (±3 dB)
Stereo separation
(KEH-P9200RDS, KEH-P8200RDS) ..... 45 dB
(KEX-P820RDS) ..... 50 dB
Signal-to-noise ratio
..... Metal:Dolby C NR IN: 73 dB (IEC-A network)
Metal:Dolby B NR IN: 67 dB (IEC-A network) .....
Metal:Dolby NR OUT: 61 dB (IEC-A network)

FM tuner (KEH-P9200RDS)

Frequency range ..... 87.5 — 108 MHz
Usable sensitivity ..... DYNAS ON: 7 dBf
(0.7 µV/ 75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... DYNAS ON: 13 dBf
(1.2 µV/ 75 Ω, mono)
Signal-to-noise ratio ..... DYNAS ON: 67 d
network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 25 — 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

FM tuner (KEH-P8200RDS, KEX-P820RDS)

Frequency range ..... 87.5 — 108 MHz
Usable sensitivity ..... 8 dBf (0.7 µV/ 75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 13 dBf (1.2 µV/ 75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 25 — 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner

Frequency range ..... 531 — 1,602 kHz
Usable sensitivity ..... 18 µV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner

Frequency range ..... 153 —281 kHz
Usable sensitivity ..... 30 µV (30 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

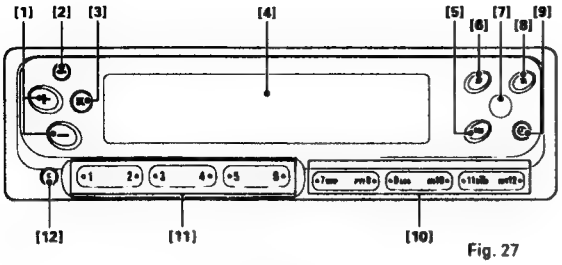


Fig. 27

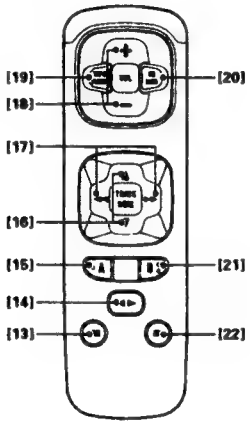


Fig. 28

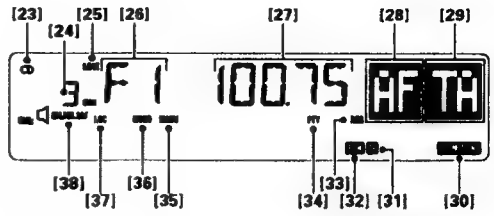


Fig. 29

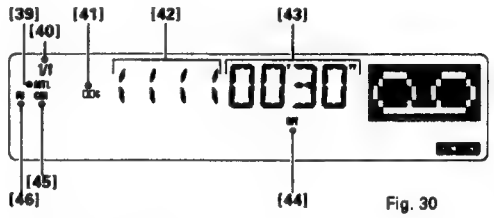


Fig. 30

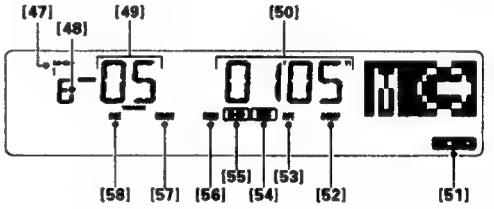


Fig. 31

Precautions

Organization of this Manual

This is the Owner's Manual for the KEH-P9200RDS, KEH-P8200RDS, and KEX-P820RDS.
The KEH-P8200RDS and KEX-P820RDS differ from the KEH-P9200RDS as follows.

KEH-P8200RDS

- This is not a DYNAS tuner. (It has no DYNAS function.)
- There is no amplifier input terminal. (When a DSP or an Equalizer is connected, the speaker cannot be connected to the internal amplifier in this unit. A separately sold amplifier is required.)

KEX-P820RDS

- This is not a DYNAS tuner. (It has no DYNAS function.)
- There is no internal amplifier. A separately sold amplifier is required.

Note to Customers Using this Unit in Combination with the "DEQ-P800" Hideaway DSP

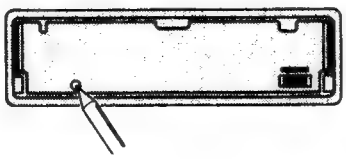
This manual does not describe operating procedures for combined use with the "DEQ-P800" Hideaway DSP. Please refer to the Hideaway DSP Owner's Manual for DSP operating details.

Using the Clear Button

Pressing the Clear button will reset the microprocessor. Press the Clear button in the following cases:

- When using the unit for the first time after connecting it.
- When there is a misoperation.
- When the display indicates a misoperation.

Remove the front panel and use the tip of a pen, etc., to press the Clear button. (To remove the front panel, refer to "Detaching the Front Panel".)



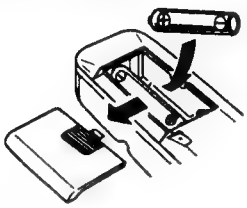
Using the Remote Controller

Parts Identification

Fig. 27
[7] Remote Controller Sensor

Fig. 28
[21] DSP

Inserting the Batteries

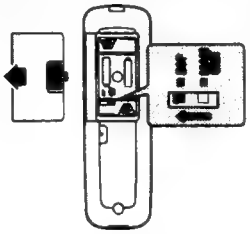


Precautions

- *Do not place the remote control unit in high temperatures or in direct sunlight.*
- *Install the batteries in the proper direction.*
- *Use only UM-4, AAA, or IEC R03 1.5 V batteries.*
- *Do not mix old and new batteries.*
- *The batteries provided with the unit are not rechargeable. Therefore do not recharge them.*
- *If the remote control unit is not to be used for more than a month, remove the batteries.*
- *If there is battery leakage, wipe the leakage completely and install new batteries.*
- *Hold the remote controller with your hand and point it toward the remote controller sensor [7] when performing an operation.*
- *It is extremely dangerous if the remote controller should fall to the floor and become lodged under the brake pedal when braking or cornering. When you are not using the remote controller, always keep it in place with the Velcro tape provided.*
- *It may not be possible to perform remote control operations if the remote controller sensor [7] is exposed to direct sunlight.*
- *Button [21] is for use of the unit in combination with a DSP.*

Note to Customers Using this Unit in Combination with a DSP except for the "DEQ-P800" Hideaway DSP

When using this unit in combination with a DSP except for the "DEQ-P800" Hideaway DSP, first set the switch on the rear of the remote controller to the DSP position, using the tip of a pen, etc. The system will not work properly unless this is done.



Using the Removable Front Panel

Parts Identification

Fig. 27
[2] Open
[4] Front Panel
[11] ③ Warning Buzzer ON/OFF

Function

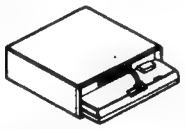
To prevent theft, the front panel is detachable. Also, if the front panel is not detached within 5 seconds after the car's ignition is turned off, a warning beep tone will sound to remind you to detach the front panel.

Canceling the Warning Beep Tone

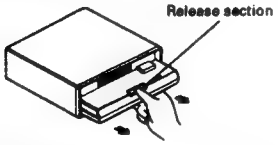
The warning beep tone function can be canceled. While pressing button ③ fo bank [11], turn the ignition key from OFF to ON. To turn ON the warning beep tone function again, repeat this operation.

Detaching the Front Panel

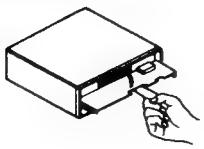
1. Press button [2], and the front panel [4] will open.



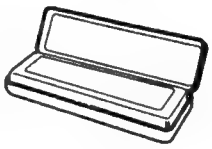
2. Grip the release section and pull the front panel forward.
   - *Take care not to grip the front panel display tightly, or to drop the panel.*



3. Close the inner cover.
   - *After detaching the front panel, be sure to close the inner cover to prevent dirt, dust or other foreign matter from entering the cassette slot.*

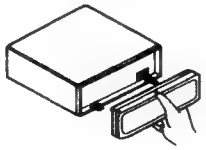


4. Keep the detached front panel in the protective case provided.



Fitting the Front Panel

1. Check that the inner cover is closed.
2. Press the front panel onto the body of the unit.
   - *Take care not to press any buttons or the display while doing this.*



Precautions

- *Do not use unnecessary force in detaching the front panel.*

- *Do not hold the display tightly.*
- *Do not subject the front panel to excessive shock.*
- *Do not place the front panel in high temperatures or direct sunlight.*
- *Do not use benzene, paint thinner, or other volatile fluids to clean the front panel.*
- *Do not disassemble the front panel.*
- *Do not touch the terminals on the front panel and unit. (If the terminals are dirty, use a clean dry cloth to clean.)*

Switching the Source

Parts Identification

Fig. 27
[3] Source Switching
[10] ⑦ AUX ON/OFF

Fig. 28
[19] Source Switching (Tape Deck, Tuner)
[20] Source Switching (Multi-CD Player)

Switching the Source on the Main Unit

Each time button [3] is pressed, the source changes in the following sequence:
Tape deck → Tuner → Multi-CD player → OFF

Switching the Source Using the Remote Controller

Each time button [19] is pressed, the source changes in the following sequence:
Tape deck → Tuner → OFF
Each time button [20] is pressed, the source changes in the following sequence:
Multi-CD player → OFF

- The source will not be switched to the tape deck if there is no cassette tape in the deck.
- The source will not be switched to the multi-CD player if a multi-CD player is not connected, or if a magazine is not loaded in the player.

When connecting other audio equipment to the IP-BUS terminal of the main unit using the separately sold conversion cord.
When listening to the audio equipment, carry out the following operations to switch to AUX mode.

1. While pressing ⑦ of button [10], turn the ignition key from OFF to ON.
2. Switching sources allows selection of AUX mode. Therefore, press button [3] to switch to AUX mode.
   Tape → Tuner → Multi-CD player → AUX → OFF

- When performing an operation with the remote controller, the mode is not switched to AUX.

Switching the Display

Parts Identification

Fig. 27
[5] Display Switching

Fig. 29
[28], [29] Message Displays

Switching the Message Display

Displays [28] and [29] change as follows each time button [5] is pressed:
Source and mode symbol → AF/TA indicator → Signal indicator

When the Unit is Used in Combination with the "DEQ-P800" Hideaway DSP
When the unit is used in combination with the "DEQ-P800" Hideaway DSP, display [28] and [29] change as follows each time button [5] is pressed:
Source and mode symbol → AF/TA indicator → Signal indicator → SFC* symbol → Equalizer curve
*SFC: Sound Field Control

- Display [28] and [29] are useful for checking the SFC and equalizer curve settings.

Making Audio Adjustments

Parts Identification

Fig. 27
[1] Volume

Fig. 28
[15] Shift/SLA
[16], [17] Audio Adjustment
[18] Volume
[22] Attenuator

Fig. 29
[25] Loudness
[38] Sub-woofer

Mode Switching

Each time button [15] is pressed, the mode changes in the following sequence:
Volume adjustment (VOL) → Balance adjustment (FAD/BAL) → Tone adjustment (BAS/TRE) → Sub-woofer (SUB.W) → Loudness adjustment (LOUD)

- When a fader, balance, or bass/treble adjustment is made, the adjustment stops temporarily at the center position. The display changes back to its previous state approximately 8 seconds after an adjustment is made.

When the Unit is Used in Combination with the "DEQ-P800" Hideaway DSP
When the unit is used in combination with the "DEQ-P800" Hideaway DSP, the mode changes in the following sequence each time button [15] is pressed:
Volume adjustment (VOL) → Balance adjustment (FAD/BAL) → Automatic volume adjustment (ASL) → Sub-woofer (SUB.W) → Loudness adjustment (LOUD)

- The mode will not be switched to Tone adjustment.
- Please refer to the Hideaway DSP Owner's Manual for the use of automatic volume adjustment (ASL).

Adjusting the Volume

The volume is increased by pressing the (+) side of button [1] or [18], and decreased by pressing the (–) side. (Display shows "VOL 00" ~ "VOL 30".)

- *When driving, the volume should be adjusted to a level that allows sounds outside the vehicle to be heard.*

Adjusting the Balance

Press button [15] to select the balance adjustment mode ("FAD" lights). Fader adjustments are made using the ▲ or ▼ side of button [16]. To adjust the balance, press either the ◀◀ or ▶▶ side of button [17] to display "BAL", then make the adjustment with the ◀◀ or ▶▶ side of the button.

Fader
The balance is gradually changed to front speaker sound only, by pressing the ▲ side of button [16], and to rear speaker sound only, by pressing the ▼ side. (Display shows "FAD F9" ~ "FAD R9".)

- When a two-speaker system is used, you should set "FAD 0".

Balance
The balance is gradually changed to left speaker sound only, by pressing the ◀◀ side of button [17], and to right speaker sound only, by pressing the ▶▶ side. (Display shows "BAL L9" ~ "BAL R9".)

Adjusting the Tone

Press button [15] to select the tone adjustment mode ("BAS" lights). Use the the ◀◀ or ▶▶ side of button [17] to select the tone you want to adjust. Pressing the ◀◀ side selects BAS, and pressing the ▶▶ side selects TRE.

Bass Adjustment

Select the bass adjustment mode. Bass intensity is gradually increased by pressing the ▲ side of button [16], and decreased by pressing the ▼ side. (Display shows "BAS –6" ~ "BAS +6".)

Treble Adjustment

Select the treble adjustment mode. Treble intensity is gradually increased by pressing the ▲ side of button [16], and decreased by pressing the ▼ side. (Display shows "TRE –6" ~ "TRE +6".)

Sub-woofer

When a sub-woofer is used with the unit, the sub-woofer setting should first be switched to ON.

Using the Sub-woofer Function

1. Press button [15] repeatedly to change to the sub-woofer mode ("80Hz 0" is displayed).
2. When button [15] is pressed for 2 seconds or more, "SUB.W" [38] lights, and the sub-woofer setting changes to ON.
3. To cancel the sub-woofer function, press button [15] repeatedly to change to the sub-woofer mode, and press button [15] for 2 seconds or more while the sub-woofer display is shown.

Adjusting the Frequency and Output Level

1. Press button [15] repeatedly to change to the sub-woofer mode.
2. Adjust the the frequency and output level adjustment while the sub-woofer display is shown. Press the ◀◀ or ▶▶ side of button [17] to adjust the frequency, and press the ▲ or ▼ side of button [16] to adjust the output level. The frequency can be set to 50 Hz, 80 Hz, or 125 Hz, and an output level can be selected in the range from –6 to +6.

Adjusting the Loudness

The loudness function compensates for deficiencies in the low and high sound ranges when listening to the unit at low volume.

1. Press button [15] to select the loudness adjustment mode (display shows "LOUD OFF").
2. Pressing button [15] for 2 seconds or more turns the loudness function ON ("LOUD" [25] lights). To cancel the loudness function, press button [15] again for 2 seconds or more ("LOUD" [25] goes off).

Using the Source Level Adjuster

This function compensates for the difference in volume when the source is switched.

- Compensation is performed on the basis of the FM volume, and therefore the FM volume cannot be adjusted.

1. Check the FM volume.
2. Switch to the source you want to adjust, and check the difference in volume between that source and FM.
3. Press button [15] for 2 seconds or more to change to the SLA mode. The current level, "V 0", is displayed.
   - The SLA mode is canceled after 8 seconds.
4. Adjust the volume level by pressing the ▲ or ▼ side of button [16]. (Display shows "V –4" ~ "V +4".)

Attenuator

Pressing button [22] reduces the volume by approximately 90% ("ATT" flashes). The original volume is restored by pressing the button once again.

Using the Tuner

Parts Identification

Fig. 27

[3] Source Switching
[6] AF
[8] TA
[10], [11] Preset
[10] Functions
- ⑦ PTY Display Switching
- ⑧ PTY Seek/PTY Setting
- ⑨ Local Mode/Local Sensitivity
- ⑩ DYNAS (KEH-P9200RDS)
- ⑪ Preset Scan/BSM
- ⑫ FM Monaural/Seek, Manual Switching

[12] Function Switching

Fig. 28

[14] Band
[16] Preset Tuning
[17] Tuning
[19] Source Switching

Fig. 29

[23] FM Stereo
[24] Preset Number
[26] Band
[27] Frequency
[28] AF
[29] TA
[30] Function
[31] TP
[32] EON
[33] REG
[34] PTY
[35] Manual
[36] FM Monaural
[37] Local Mode

Function Switching

Button [10] has two functions. It switches FM monaural, BSM, etc. ON and OFF, and it also serves as the preset button for the FM1 band. Press button [12] to switch the function as desired.

Functions ON ([30] lit)

To use the buttons in bank [10] with functions such as FM monaural and BSM, set functions ON.

Functions OFF ([30] off)

Leave the functions OFF when using button [10] as the preset button for the FM1 band.

Listening to the Radio

Electronic Tuner

Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for Western Europe, Asia, the Middle and Near East, Africa, Australia and Oceania. Use in other areas may result in improper reception of AM. The RDS function does not work in regions with no RDS broadcast services.

1. Press button [3] or [19] to switch the source to the tuner.
2. Press button [14] to select the band. The band changes each time the button is pressed as follows:
   FM1 → FM2 → MW/LW
   - MW and LW together comprise one band.
3. Select a station using manual tuning or seek tuning.

3–1. Pressing button ⑫ of bank [10] for 2 seconds or more switches between seek and manual tuning alternately. When manual tuning is selected, "MANU" [35] lights.

3–2. Tune by pressing the ◀◀ or ▶▶ side of button [17]. (When a stereo station is tuned in, "◯" [23] lights.)

- When the function is OFF, switching between seek and manual tuning can not be done in FM1 stations. Press button [12] to turn the function ON.

Seek Tuning

When the button is pressed, a station with a signal of a given strength or greater is tuned in automatically.

Manual Tuning

When the button is pressed, the frequency changes step by step.

Preset Memory

The radio stations can be stored in memory under buttons 1 to 6 of [11].

- FM1 bands can be stored in the memory of button [10] (7 to 12). Leave the function OFF when storing memory into button [10].

1. Tune in to the station to be stored in memory.
2. Store the station in memory by pressing one of the buttons (1 to 6) for at least 2 seconds. When the [24] number stops blinking and there is a beep, the station will be stored in memory under the button pressed.
   - Up to 18 FM stations (12 stations on FM1 and 6 stations on FM2) and 6 MW/LW stations can be sotred in memory.

Preset Tuning

The radio stations stored in memory can be recalled by pressing the respective button 1 to 6 of [11]. The station stored under that button will be recalled. (The number of the button pressed will be displayed at [24].)

- The FM1 band can recall broadcast stations stored in the memory of button [10]. Set functions OFF before recalling a station memorized in one of the buttons in bank [10].
- When using the remote controller, a station memorized in a button in bank [10] or [11] can be recalled by pressing the ▲ or ▼ side of button [16].

Note:
When using a button in bank [10] in the operations in the following sections, turn functions ON first.

BSM (Best Stations Memory)

The radio stations having a strong signal can be tuned automatically and stored in memory under buttons 1 to 6 of [11]. Press ⑪ of button [10] for at least 2 seconds. (The "BSM" will blink.) After "BSM" stops blinking, the stations will be stored in memory under buttons 1 to 6 of [11].

- The FM1 band can also be stored in the memory of button [10].
- BSM can be canceled mid-operation by pressing ⑪ of button [10].
- The stations will be stored under buttons 1 to 6 in the order of their signal strength. The strongest station will be stored under button 1, followed by stations with lower signal strengths.
- If there are fewer than 6 stations whose signal is strong, there will be spare memory.
- It will take almost 30 seconds for BSM to be completed.

Preset Scan Tuning

This recalls in sequence all the stations stored in memory under the buttons [11] for 8 seconds each. Press ⑪ of button [10]. (The [24] number will blink.) To cancel, press the button again. After the desired station is tuned, cancel the preset scan tuning. The station will then continue to be received.

- Stations stored in memory under the buttons [11] but whose signal is weak will not be recalled.
- The FM1 band can recall broadcasting stations stored in the memory of button [10].

Local Seek Tuning

When the local mode is selected, seek tuning sensitivity changes and only stations with a stronger signal than in the case of normal seek tuning are tuned to. The local mode sensitivity can also be adjusted.

To Select Local Mode

Press button ⑨ of bank [10]. ("LOC" [37] lights.) To cancel local mode, press the button once again.

Adjusting Local Seek Sensitivity

The sensitivity can be adjusted in 4 steps for FM and 2 steps for MW/LW.

- LOC-4 tunes in only the stations with the strongest signals, and LOC-3, LOC-2, and LOC-1 tune in stations with progressively weaker signals.

1. Select the local seek sensitivity adjustment mode. Press button ⑨ of bank [10] for 2 seconds or more. (The current sensitivity is displayed.)
   - The local seek sensitivity adjustment mode is canceled after approximately 5 seconds.
2. Press the ◀◀ or ▶▶ side of button [17] to adjust the sensitivity.

FM Monaural Reception

If the noise in a stereo broadcast is distracting, you can reduce the noise by switching to monaural reception. Press button ⑫ of bank [10]. ("MONO" [36] lights.) To cancel monaural reception, press the button once again.

DYNAS Function (KEH-P9200RDS)

If the FM broadcast being received is not clear because of interference from another station, interference from other stations can be prevented by turning on the DYNAS function.

Pressing button ⑪ of bank [10] for 2 seconds or more switches the DYNAS function ON and OFF alternately.

Using the RDS Function

What is RDS?

RDS (Radio Data System) according to a CENELEC EN50067 is a system for transmitting data signals from FM broadcast transmitter along with the normal sound program. These data signals, which are imperceptable to listeners, are intended to aid radio listeners in tuning their receivers to a desired station. RDS receivers can decode these data signals for display or control purposes.

RDS digital signal includes various data, such as PI, PS, AF, TP, TA, EON and PTY.

PI .....**Program Identification Code**
PS .....**Program Service Name**
AF .....**List of Alternative Frequencies**
TP .....**Traffic Program Identification Code (Similar to SK signal of ARI system)**
TA .....**Traffic Announcement Code (Similar to DK signal of ARI system)**
EON.....**Enhanced Other Network Information Code. (In some countries, EON is not offered by broadcasters.)**
PTY.....**Program type ID code**

RDS Function of this Unit

This unit has the following functions for making use of RDS data.

- PS, the name of the currently listened station is displayed.
- AF (Alternative Frequency) function. This enables the receiver to automatically retune to more suitable frequencies transmitting the same program.
- TP/TA, EON, user selectable reception of the traffic information service, offered by RDS.
- The PTY code permits automatic reception of the broadcast having the same type of program.

Network/Station Name Display

Switch the tuner on and choose one of the 2 FM bands.

When you tune into an RDS station with manual or seek tuning, the frequency display changes to the network/station name display after a few seconds by means of the PS code.

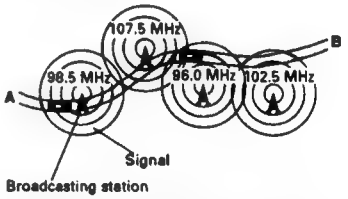
- The RDS functions of this unit use RDS codes transmitted along with FM broadcasts. RDS doesn't work on the MW or LW bands.
- The RDS functions may not work properly in areas where the RDS transmissions are at an experimental stage or where there are flaws in the broadcasting system.
- Hold down button ⑦ of Bank [10] for more than 2 seconds to change the network/station name display to a frequency display. The frequency will be displayed only while the button is being held down.

AF Function

This receiver retunes automatically to a more suitable transmitter, contained in the list of Alternative Frequencies (AF), to enable the motorist to keep listening to programs in the same network.

Example:

If a motorist travels as shown below, from point A to point B, (and has selected AF function) then the receiver will automatically retune to a more suitable frequency transmitting the same program. This is shown by the automatic retuning from 98.5 MHz to 107.5 MHz to 96.0 MHz to 102.5 MHz.



To activate the Alternative Frequency Function, press button [6], "AF" [28] will appear on the display. Once tuned to a RDS station, as long as you drive within an area served by the same network, the receiver will automatically retune to a more suitable station transmitting the same program, by utilizing the data in the AF list.

- "PI SEEK" will appear on the display, if the AF function has been selected, and a suitable AF station cannot be found. In this case, the receiver will mute the radio sound and search the frequency band, in order to find a station with the same PI code. The receiver will return to the original frequency if the same or related PI code cannot be found.
- The AF function will not work in the following cases:

— when the receiver is tuned to a non-RDS station. (local station)
— when the RDS station does not transmit any AF list data.
— when the receiver cannot receive the AF list due to disturbances.

When the receiver is unable to find a PI code, the box of "AF" [28] will start rotating.
Thus indicating that the AF function cannot be performed.

Preset Recall

- When recalling preset stations in the AF mode, the tuner will be tuned to the stored frequency and the AF function will be operative i.e. when the signal of the recalled station is weak or has a different PI, the radio will look into the AF list and if necessary start a PI-seek in order to find a station with the same or related PI code. When the tuner is performing a PI seek "PI SEEK" is shown on the display.
  If the PI seek is successful, the tuner will be tuned to the new frequency that transmits the same program service (i.e. with the same PI code) and the display will show the stored PS.
  If the PI seek is not successful, the tuner will return to the stored frequency. If a new station (with a different PI code) would be received on this frequency, this station will become audible.
- When recalling preset stations in the AF=OFF mode, the tuner will be tuned to the stored frequency and the display will show the stored PS. In case the tuned station has a PI code that is different from the stored one, the tuner will accept the new PI code and stay tuned to the initial frequency. The display will show the new PS when the signal of the tuned station is strong enough.

Listening to Regional Stations

In some countries a particular program service may "opt out" during a certain part of the day in several regional variants at particular locations. Since these regional variants are broadcasting a different program they temporally have a PI and a PS that is different from the main program service. The PI's are mostly "generically linked". The AF list may either be common for all regional variants or each regional variant may have its own AF list.
In other countries there may be regional stations which are not an "opt out" of a particular main program service but which have an independent existence. These regional stations all have a different PS. Their PI's may be "generically linked" and their AF lists may carry frequencies which are alternatives for that regional station only.

1)Regional OFF Mode

When AF is ON and REG is OFF, the receiver will switch automatically to regional stations that are likely to be broadcasting the same program but which do not necessarily match the region code. If this results in repeated reception of undesired different program contents, switch to the REG ON mode.

2)Regional ON Mode

When AF is ON and REG is ON, the receiver will switch automatically only to regional stations that precisely match the region code and are therefore definitely broadcasting the same program.

REG ON/OFF

To put the radio in the REG ON mode, press button [6] for more than 2 seconds. "REG" [33] will appear on the display.
To cancel the REG ON mode i.e. to put the radio back in the default REG OFF mode, press button [6] again. "REG" [33] will disappear from the display.

PTY Function

This unit's PTY function uses the PTY codes put out by the RDS station to provide three functions: PTY Display, PTY Seek, and PTY Alarm.

- PTY Display is a function that shows the program type of a received station if the broadcast station is an RDS station and is putting out a PTY code.
- PTY Seek is a function that receives RDS stations broadcasting the program type that the user has selected beforehand.
- PTY Alarm is a function that receives an RDS station after picking up an emergency PTY alarm code put out by that station when a natural disaster or nuclear accident, etc., has occurred.

PTY indication switching

When an RDS station is received, the network/station name display appears. At this point, if the unit has picked up the PTY code, press [10] the ⑦ button, and PTY (program type) will be displayed for 8 seconds.

- PTY display contents are of the following 16 types: NO PTY, AFFAIRS, CLASSICS, CULTURE, DRAMA, EASY MUS, EDUCATE, INFO, L.CLASS, NEWS, OTH MUS, POP MUS, ROCK MUS, SCIENCE, SPORT, VARIED
- Some stations may broadcast program contents that differ from the PTY code.
- "NO PTY" is displayed when no PTY code can be picked up from the received station.

Setting the program type

1. Press and hold down [10] the ⑧ button for at least 2 seconds to switch to the PTY setting mode. ("PTY" [34] will light and the program types will be shown on the display for about 5 seconds.)
2. While the program types are shown on the display, press the ◀◀ side or ▶▶ side of the [17] button to select the type that you want.

Note:
In the CURRENT mode, if the currently received station is an RDS station and the PTY code has already been picked up, then the program type is automatically set to match that station's PTY code.

PTY Seek

For automatic reception of RDS stations having the PTY code that you have selected beforehand.
Pressing [10] the ⑨ button causes your selected program type to flash on the display and PTY SEEK to begin ("PTY" [34] flashes).

- PTY seek automatically receives RDS stations having a different PI code with the set PTY code. However, it will return to the previous station if "NO PTY" is displayed.
- If PTY SEEK is unsuccessful, "NO PTY" will be shown on the display for about 2 seconds, after which it will return to the station received before PTY SEEK began.
- Non TP RDS stations may be received during PTY seek even if TA (Traffic Information Standby) is on. In this case an alarm sounds after about 30 seconds to tell you that it is not a TP station.

PTY Alarm

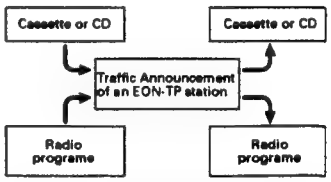
Among the PTY codes there is also one for emergency announcements warning of natural disasters, nuclear reactor accidents, etc. In case of such disasters, RDS stations may output this emergency PTY alarm code. When this unit is ON (not during MW/LW reception), and this PTY code is picked up, ALARM will light on the display, volume will be set to TA interrupt level, and that RDS station will be received. When the RDS station stops putting out the emergency PTY alarm code, the unit will return to the previous source. To return to the previous source during reception of the emergency program, press button [8].

Traffic Information Reception

TP and EON-TP function

When a traffic information station (TP station) is selected, "TP" [31] lights on the display, thus indicating traffic report can be received through this station. The "EON" [32] and "TP" [31] indicator will light on the display when a selected station (this network) is broadcasting EON information which cross-references at least one program service which carries traffic information, thus indicating traffic report can be received through another program service by using the EON function of this unit.
In both cases, by briefly pressing button [8], traffic report waiting status will be entered.

Traffic information reception by EON-TP



Traffic Announcement Volume Adjustment

- The volume level for traffic information broadcasting is temporarily stored in memory.

TP Alarm Function

- In TA mode, about 30 seconds after "TP" [31] disappears from the display, which occurs if the signal from the TP becomes weak, an alarm sounds for 10 seconds to tell you to tune to another TP station.

TA Reception during CD or Cassette Play

- If the radio is already set to the FM band and tuned to a TP or EON-TP station, even when listening to the cassette or the multi-play CD player, when the button [8] is pushed ("TA" [29] is shown on the display), traffic report waiting will begin. When a traffic report begins, the system will switch from cassette or CD to the traffic report.

BSA Function

- While button [8] is on, ("TA" [29] is shown on the display) and AF is off, and you are listening to either the cassette or multi-play CD player, should the TP station become weak, the radio will start BSA (Best TP Station Auto Search) 10 seconds after "TP" [31] disappears from the display. The tuner will automatically tune to the strongest TP station in the area, and will stand by for a traffic bulletin. BSA does not work when the AF function is selected, so press button [6] to turn the AF function off.

TP Alarm Function

- In AF mode, about 30 seconds after "TP" [31] disappears from the display, which occurs if the signal from the TP becomes weak, an alarm sounds for 10 seconds to tell you to tune to another TP station.

Tuning Functions on each RDS mode

Tuning Mode	AF Mode	TA Mode & AF plus TA Mode
Seek Tuning will stop to find,	RDS Stations	TP or EON-TP Station
BSM will select and memorize in presets,	RDS Stations	TP Stations

Non-RDS stations such as those using the Swedish MBS system may be tuned in as RDS stations, but this is due to both systems using the same 57 kHz subcarrier frequency and is not a malfunction of the unit.

Tuning Steps

The tuning step is normally 50 kHz during seek tuning on an FM band. However this tuning step changes to 100 kHz when the set is in AF or TP mode. In some countries it may be desired to set a tuning step of 50 kHz in AF mode by holding down button ① of Bank [11] while turning the ignition key from OFF to ON.

- During manual tuning, the step does not change; it remains fixed at 50 kHz.
- The tuning step will return to 100 kHz if the batteries supply is temporarily disconnected or the clear button is pressed.
- In AF mode, only those stations being broadcast at 100 kHz steps are subject to AF reception (CENELEC STANDARD).

Using the Tape Deck

Parts Identification

Fig. 27
[2] Open
[3] Source Switching
[4] Front Panel
[10] Functions
⑦ FLEX (Frequency Level Expander)
⑧ Dolby B and C NR
⑨ Blank Skip
⑩ Radio Intercept/CD Intercept
⑪ Scan Playback
⑫ Repeat Playback

Fig. 28
[14] Tape Direction Switching
[17] Fast Forward/Rewind and Music Search
[19] Source Switching

Fig. 30
[39] Metal
[40] FLEX (Frequency Level Expander)
[41] Dolby B and C NR
[42] Tape Direction Display
[43] Continuous Playback Time Display
[44] Repeat Playback
[45] CD Intercept
[46] Radio Intercept

About Cassette Tapes

- *Do not use tapes longer than C-90-type (90 min.) cassettes. Longer tapes can interfere with tape transport.*
- *A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.*
- *Storing cassettes in areas directly exposed to sunlight or high temperatures can distort them and subsequently interfere with tape transport.*

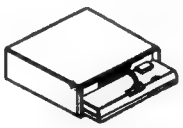
- *Store unused tapes in a tape case where there is no danger of them becoming loose or being exposed to dust.*

Cleaning the Head

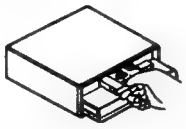
- *If the heads become dirty, the sound quality will deteriorate and there will be sound dropouts and other imperfections in performance. In this case, the head must be cleaned.*
- *When using a cleaning tape, play it once on one side for normal cleaning. Excessive use of the cleaning tape will increase head wear. Be sure to read the cleaning tape instructions before use.*

Listening to a Tape

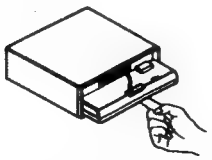
1. Press button [2] to open the front panel [4].



2. When a cassette tape is inserted into the cassette slot, power will be turned on and the tape will begin playing.



3. Close the front panel and adjust the volume and tone.



4. To stop playback, press button [3] or [19] to switch the source OFF.

5. To eject the cassette, press button [2] to open the front panel [4], then press the Eject button.

- When a cassette is already loaded, tape playback can be turned ON/OFF by pressing button [3] or [19].
- *Do not try to eject the cassette immediately after insertion, as it may result in malfunction. Only eject a cassette when it is playing.*

Continuous Playback Time

During tape playback, the continuous playback time is shown in [43] in the display.

- The continuous playback time count is halted at the following times.
  — When the power is turned OFF.
  — When you switch to another source.
  — When fast-forwarding/rewinding and while the Music Search function is operating.
- The continuous playback time count starts at "00'00" at the following times.
  — When a tape is inserted.
  — When the tape direction is changed by pressing button [14].
  — When the tape switches from side A to side B, or vice versa.

Tape Direction Switching

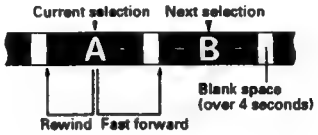
Pressing button [14] switches tape playback from side A to side B, or vice versa.
">>>>" is displayed in [42] when side A is playing, and "<<<<" when side B is playing.

Fast Forward/Rewind

1. To fast-forward a tape, press the ▶▶ side of button [17]. ("FF" appears in the display.)
   To rewind a tape, press the ◀◀ side of button [17]. ("REW" appears in the display.)
2. To cancel fast-forwarding or rewinding, press button [14].

Music Search

1. If you want to listen to an A track again from the beginning, press the ◀◀ side of button [17] twice in succession. ("R-MS" appears in the display.)
   If you want to listen to a B track from the start, press the ▶▶ side of button [17] twice in succession. ("F-MS" appears in the display.)
   Normal playback is restored by pressing the button three times in succession.



2. To cancel the music search function, press button [14].

- The Music Search function may not work properly with the following kinds of recorded tapes because the gap between tracks cannot be found correctly.
  — A tape with a gap of 4 seconds or less between tracks.
  — A tape containing dialog, etc., with pauses lasting for 4 seconds or longer.
  — A tape with an extremely quiet passage in the music lasting for 4 seconds or longer.

Dolby B and C NR

When playing a tape recorded with Dolby NR, press button ⑧ of bank [10]. Pressing button ⑧ of bank [10] switches alternately between Dolby NR modes as follows:
Dolby B NR ("□□" [41] lit) → Dolby C NR ("□□C" [41] lit) → Cancel

- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
  "DOLBY" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Metal Tape Display

When a cassette tape is inserted, equalizer (70 μs/120 μs) switching is performed automatically by the auto tape selector feature, and when a metal or chrome tape is inserted, "MTL" [39] lights. Nothing is displayed for a normal tape.

Blank Skip

This function fast-forwards to the next track automatically if there is a long period of silence (12 seconds or more) between tracks.
Pressing button ⑨ of bank [10] switches the blank skip function ON and OFF alternately.

Radio Intercept and CD Intercept

The CD intercept function only works when an optional multi-CD player (such as the CDX-P1210) is used with this unit. Pressing button ⑩ of bank [10] switches the mode as follows:
Radio Intercept ("RI" [46] lit) → CD Intercept ("CDI" [45] lit) → Cancel

- The radio intercept and CD intercept functions do not work during a Music Search operation.

Radio Intercept

This function allows you to listen to the radio during tape fast-forwarding/rewinding.

1. Press button ⑩ of bank [10] to switch to the radio intercept mode. When fast-forwarding or rewinding is performed, the unit will switch to the radio.
2. To cancel the radio intercept mode, press button ⑩ of bank [10].

CD Intercept

This function allows you to listen to a CD during tape fast-forwarding/rewinding.

1. Press button ⑩ of bank [10] to switch to the CD intercept mode. When fast-forwarding or rewinding is performed, the unit will switch to the CD.
2. To cancel the CD intercept mode, press button ⑩ of bank [10].

Scan Playback

This function plays approximately the first 10 seconds of each track in succession. This is useful for finding a particular track you want to hear.

1. When button ⑪ of bank [10] is pressed, the first 10 seconds of each track is played in succession. ("SCAN" appears in the display.)
2. When you find the track you want to hear, press button ⑪ of bank [10] again to cancel scan playback and hear the rest of the track.

- The scan playback function may not work properly with the following kinds of recorded tapes because the gap between tracks cannot be found correctly.
  — A tape with a gap of 4 seconds or less between tracks.
  — A tape containing dialog, etc., with pauses lasting for 4 seconds or longer.
  — A tape with an extremely quiet passage in the music lasting for 4 seconds or longer.

Repeat

The repeat function lets you hear the same track over again.

1. Pressing button ⑫ of bank [10] allows you to repeat the track being played. ("RPT" [44] lights.)
2. The repeat function can be canceled by pressing button ⑫ of bank [10] again, or pressing button [14].

- The repeat function may not work properly with the following kinds of recorded tapes because the gap between tracks cannot be found correctly.
  — A tape with a gap of 4 seconds or less between tracks.
  — A tape containing dialog, etc., with pauses lasting for 4 seconds or longer.
  — A tape with an extremely quiet passage in the music lasting for 4 seconds or longer.

FLEX (Frequency Level Expander)

If the high-frequency performance is poor when playing back an old or poorly recorded cassette, you can improve it by pressing button ⑦ in Bank [10]. ("1 / f" [40] appears.)

- This function may have little effect on a casstte offering good sound quality, for instance, one recorded from compact disc.

Playing a CD

Precautions When Using the Multi-CD Control

- This unit can control multi-CD players when it is used with multi-CD player (such as the CDX-P1210).
- If the IP-BUS extension adapter is used, up to 4 multi-CD players can be connected. When two or more CD players are connected, their priorities must be specified for the Multi-CD players. See the Multi-CD players instructions and set the address switches correctly.

Parts Identification

Fig. 27
[3] Source Switching
[10], [11] Disc Number Search
[10] Functions
⑦ Display Switching/Disc Title
⑧ Pause/Random Playback
⑨ Title List/ITS Clear
⑩ ITS/ITS Playback
⑪ Scan Playback/Digital Compression
⑫ Playback Mode Switching /Track Number Search– Fast Forward, Rewind Switching
[12] Function Switching

Fig. 28
[14] Multi-CD Player Switching
[16] Disc Number Search
[17] Track Number Search/ Fast Forward, Rewind
[20] Source Switching

Fig. 31
[47] Multi-CD Player Number
[48] Disc Number
[49] Track Number
[50] Playback Time
[51] Function
[52] COMP
[53] One Track Repeat
[54] Disc Repeat
[55] Magazine CD Repeat
[56] Random
[57] Fast Forward/Rewind
[58] DBE

Using the Multi-CD Player

1. Press button [3] or [20] to switch the source to the multi-CD player. (The multi-CD player number [47], disc number [48], track number [49], and playback time [50] are displayed.)
   - When you turn the power on or change the disc to be played, the multi-CD player may perform a preperatory operation (verifying there is a disc, reading disc information, etc.). "READY" is displayed during this time.
   - If the multi-CD player is unable to operate normally, an error message will appear on the display (e.g. "ERROR-80"). If this happens, check the meaning of the error message in the multi-CD player Instruction Manual.
2. To stop disc playback, press button [3] or [20] to switch the source OFF.
   - When CD playback is started again, it will begin near the track at which playback was stopped.

Switching functions

Button [10] has two functions. It switches ITS, random playback, etc. ON and OFF and it also serves as the disc number search. Press button [12] to switch the function as desired.

- If a 6-Disc Multi-play CD-player is connected, switching between functions ON and OFF cannot be performed even if button [12] is pressed.

Functions ON ([51] lit)
When using buttons in bank [10] with a function such as ITS or random playback, you should first turn functions ON.

Functions OFF ([51] off)
When using buttons in bank [10] to search the disc number, you should first turn functions OFF.

Switching the multi-CD player

A maximum of 4 multi-CD players can be connected to this unit.
Press button [14] to choose the desired CD player. The number of the CD player is indicated in [47] on the display.

Disc number search

Select the disc using buttons [10] and [11]. The disc number is indicated in [48] on the display.

- Leave the function OFF when selecting a disc using button [10].
- When using the remote controller, the disc, set in the multi-CD player is switched each time the ▲ or ▼ side of button [16] is pressed.

- It takes a few seconds for CD playback to begin after a button is pressed. This is the time taken to change the disc.

> **Note:**
> Leave the function ON when using button [10] for the following operations.

Track Number Search

The track number search function lets you select a particular track on a disc. Check that "MANU" does not light in display [57]. If it does, turn it out by pressing button ⑫ of bank [10] for 2 seconds or more.
The track number [49] is incremented by pressing the ▶▶ side of button [17], and decremented by pressing the ◀◀ side. Holding down the button will increment/decrement the number continuously.

Fast Forward/Rewind

1. Press button ⑫ of bank [10] for 2 seconds or more. "MANU" [57] will light.
2. Press the ▶▶ side of button [17] to fast-forward, or the ◀◀ side to rewind.
   - Playback can be heard while fast-forwarding or rewinding.

Pausing

The disc playback can be stopped temporarily by pressing ⑧ of button [10]. (The "PAUSE" will be displayed.) To cancel the pause, press the button again.

Repeat

You can select one of the play modes (repeat modes) listed below.

Play mode (repeat mode)	Operation
One-Track Repeat	Play the current track repeatedly. • When you perform track number search or fast forward or rewind, the mode changes to disc repeat mode. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Disc Repeat	Play the same disc repeatedly. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Magazine Repeat	Play all discs loaded in the magazine in the multi-CD player repeatedly. All discs in the magazine are played repeatedly from the first disc.
ALL Repeat*	The mode changes to this mode when 2 or more multi-play CD players are connected. Multi-CD players 1 to 4 are played.

* When 2 or more multi-CD players are connected.

Each press of button ⑫ in bank [10] causes the mode to change as follows:
One-Track Repeat ("RPT" [53] appears.) → Disc Repeat ("DISC" [54] appears.) → Magazine Repeat ("M-CD" [55] appears.) → ALL Repeat ([53] [54] [55] will disappear.)

Random Play

The microcomputer of the CD player selects plays tracks on discs in random order. Random play is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played at random
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	All tracks on the discs in the magazine being played.
ALL Repeat*	All tracks on all discs in multi-CD players 1 to 4.

* When 2 or more multi-CD players are connected.

1. Select the desired random play mode (repeat mode).
2. Hold down button ⑧ in bank [10] for more than 2 seconds. ("RDM" appears on the display [56].) To cancel random play, hold down button ⑧ in bank [10] for more than 2 seconds again. ("RDM" disappears.)

• Since selections are played in random order, the same selection may be played twice in succession.

Using Scan Play

The first parts of each track are played in succession for about 10 seconds. This function is useful to search for the track or disc you want to listen to. Scan is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be scanned and played
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	The first tracks of all the discs in the magazine being played.
ALL Repeat*	First tracks of all discs loaded in multi-CD players 1 to 4.

* When 2 or more multi-CD players are connected.

1. Select the desired scan play mode (repeat mode).
2. Press button ⑪ in bank [10]. ("SCAN" appears on the display.) The first parts of all tracks are played in succession for about 10 seconds.
3. When you hear the track you want, press button ⑪ in bank [10] again to cancel Scan. ("SCAN" disappears.) The track (disc) being played is when played to the end.

• The previous function automatically resumes when a piece of music with which Scan began returns.

ITS (Instant Track Selection)

This function lets you program and play the tracks you want. You can listen to just your favorite tracks.

- The ADPS function* of the multi-CD player lets you program up to 100 discs. (Up to 100 discs can be programmed including disc title inputs.)
  * ADPS: Automatic Disc Program Selection
- Up to 99 tracks can be programmed for a single disc.
- From the 100th disc, the data for a new disc will overwrite the data of the oldest disc, that has not been played back (information has not been updated).
- Tracks are programmed for each disc. Programmed tracks are not erased after the disc is changed.

Programming

1. Play the track you want to program.
2. Press button ⑩ in bank [10] to program the track. ("ITS" appears on the display for 3 seconds.)
- Program tracks while ITS play is not in progress. It is possible during scan play or random play.

ITS Play

Tracks are played according to ITS play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played by ITS
One-Track Repeat	Programmed tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	Programmed tracks on the disc being played.
Magazine Repeat	Programmed tracks on the discs in the magazine being played. • If the disc being played contains no programmed tracks, the next disc containing programmed tracks is played.
ALL Repeat*	Programmed tracks on all discs in all magazines in multi-CD players 1 to 4. • If the disc (multi-CD) being played contains no programmed tracks, the next disc (multi-CD) containing programmed tracks is played.

* When 2 or more multi-CD players are connected.

1. Select the desired ITS play mode (repeat mode).
2. Hold down button ⑩ in bank [10] for more than 2 seconds. ("ITS.P" appears on the display.) To cancel ITS play, hold down button ⑩ in bank [10] for more than 2 seconds again. ("ITS.P" disappears.)

- If you try to play a track that is not programmed within the play range of the selected repeat mode by ITS, "EMPTY" will appear on the display for about 3 seconds, indicating that ITS play is not possible.
- You can perform scan play or random play during ITS play. In this case, scan play or random play applies to all the tracks stored in memory. (If the play mode is the magazine repeat mode or all repeat mode, scan play applies to all the tracks of the discs in the magazine stored in memory.)
- During ITS play, multi-CD players containing discs with programmed tracks are switched, and disc and track number search is performed on programmed tracks. So, you cannot switch to any tracks or discs that are not stored in memory.
- When you turn the power on or change the disc to be played, the multi-CD player may perform a preparatory operation (verifying there is a disc, reading disc information, etc.). "READY" is displayed during this time.

Erasing the ITS Program

You can erase one or all selections of the program for the disc being played by ITS.

To erase a single selection:

1. Start ITS play.
2. Play the track you wish to erase by using disc number search or track number search.
3. Hold down button ⑨ in bank [10] for more than 2 seconds.

- If programmed tracks are completely erased, "EMPTY" appears on the display and the ITS play will be canceled.

To erase the disc program:

1. Start normal play.
2. Play the disc you wish to erase by using disc number search.
3. Hold down button ⑨ in bank [10] for more than 2 seconds to erase the program. ("CLEAR" appears on the display for about 3 seconds.)

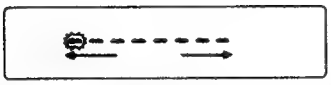
Disc Title Input

You can enter a title for the disc in the multi-CD player. The title stored for the disc can be displayed.

- The ADPS function* of the multi-CD player lets you enter titles for up to 100 discs. (Up to 100 discs, including ITS, can be programmed.)
  * ADPS: Automatic Disc Program Selection
- A disc title can consist of up 8 characters for a single disc.
- From the 100th disc, the data for a new disc will overwrite the data of the oldest disc, that has not been played back (information has not been updated).
- One title is stored for each disc. The title stored for a disc is not erased after the disc is changed.

Entering Titles

1. Select the disc for which you want to enter a title.
2. Hold down button ⑦ in bank [10] for more than 2 seconds to select title input mode.
3. Press the ◀◀ or ▶▶ side of button [17] to select the input position. The input position moves continuously when you hold down either side of the button.



4. Select characters using the ▲ or ▼ side of button [16]. When you hold down either side of the button, the character changes continuously. Each press of the ▲ side changes the character from "A → B → C...", while each press of the ▼ side changes the character from "C → B → A". To enter a space, select the space sign (_).
5. Enter all characters by repeating steps 3 and 4.
6. Press button ⑦ in bank [10] to store them in memory.
   The title will appear on the display.

Disc Title List

You can list all discs loaded in the magazine being played. This function is convenient for checking discs in the magazine being played.
Each press of button ⑨ in bank [10] displays the titles of the discs in magazine being played in ascending order of disc number.
The disc title list mode is displayed for about 8 seconds, then the normal operation display returns.

- Nothing is displayed for discs having no titles.
- Trays with no discs are skipped.

Select the disc to be played from the disc list display

1. Press button ⑨ in bank [10] to display the disc title.
2. When the title of the disc you want to listen to is displayed, press button ⑦ in bank [10]. That disc is played.

Display Switching

Pressing button ⑦ of bank [10] switches between the elapsed playback time display and the disc title display alternately.
Press button [14] during title indication to make the track display and playback time display appear for about 8 seconds.

- Nothing is displayed for discs having no titles.

CD sound quality adjustment function

If you connect a Multi-CD player with COMP (Compression) and D.B.E. (Dynamic Bass Emphasis) functions to this unit, you can use these functions with this unit. (If you connect a Multi-CD player that does not feature these functions, even if you try to switch to these functions, "NO COMP" is displayed, indicating that switching is not possible.)

COMP (Compression) function

This function suppresses loud sounds while boosting quiet sounds to reduce the difference between the two.
Use this function if there is distortion when you raise the volume.
When the COMP function is ON, "COMP" [52] lights in the display.

D.B.E. (Dynamic Bass Emphasis) function

When listening in a car, bass sound may be insufficient. This function boosts bass.
When the D.B.E. function is ON, "DBE" [58] lights in the display.

COMP and D.B.E. switching

You can switch between two COMP and D.B.E. levels.
Level switching of both functions at the same time is not possible.

1. Press button ⑪ in Bank [10] for more than 2 seconds to select the switching mode.
2. Each time you press button ⑪ in Bank [10], the mode changes as follows:
   COMP OFF → COMP 1 → COMP 2 → COMP OFF → DBE 1 → DBE 2 → COMP OFF

- With both COMP and D.B.E., the second mode is more effective.

Using the Clock

Parts Identification

Fig. 27
[9] Clock
[11] ① Hour adjustment
② Minute adjustment
③ Time signal adjustment

Displaying the Time

Pressing button [9] will turn the display to time indication. Pressing button [9] again will cancell the time indication.

- The colck display can be used only when the main unit is in operation.
- When the colck display is ON, pressing other buttons will release the colck display. The display will be restored approximately 25 seconds after the button operation has been completed.

Adjusting the Time

Adjusting Hours

While holding down button [9], press button ① in bank [11], to adjust the hour setting of the colck. Each press of button ①, advances the hour setting by one hour, and holding it down advances the setting at high speed.

Adjusting the Minutes

While holding down button [9], press button ② in Bank [11], to adjust the minute setting of the colck. Each press button ②, advances the minute setting by one minute, and holding it down advances the setting at high speed.

- After the minute is adjusted, the clock will start from 0 second when button [9] is released.

Adjust the colck with the "Immedeate colck adjustment"

Hold down button [9] and press botton ③ in Bank [11]. The time becomes "○○:00".

- If the "minute" indication is 00 to 29, it is discarded, and the colck starts.
  (Example: If the time is "10:18", it becomes "10:00".)
- If the "minute" indication is 30 to 59, it is rounded up and the clock starts.
  (Example: If the time is "10:36", it becomes "11:00".)

Learn Function

Parts Identification

Fig. 27
[5] Learn Mode

Fig. 28
[13] Learn

One of the buttons on this unit can be memorized in button [13] on the remote controller.

1. Press button [5] for 2 seconds or more to set the learn mode. ("LEARN" appears on the display.)

- The learn mode is canceled after 8 seconds.

2. Press the button on the unit which you want to memorize in the remote controller.

- Button [2] cannot be memorized.

Regarding the Cellular Telephone Muting

When a call is received or placed with a cellular telephone, the cellular telephone muting will turn ON. When the phone is hung up, the muting will be canceled.

- No soud is produced.
- "CALL" will be displayed.
- The audio operation can not be done except volume control.

PIONEER
The Art of Entertainment

Service Manual

ORDER NO.
CRT1640

CASSETTE MECHANISM ASSY

CX-631

- **This service manual describes operation of the cassette mechanism incorporated in models listed in the table below.**
- **When performing repairs use this manual together with the specific manual for model under repair.**

Model	Service Manual	Cassette Mechanism Unit	Deck Unit
KEH-P990/UC	CRT1639	EXK3170	CWM3954
KEX-P820/ES	CRT1656		
KEX-P820RDS/EW	CRT1638		
KEH-P9200RDS/EW, X1BEW	CRT1638	EXK3130	CWM3953
KEH-P9250/ES	CRT1656		
KEH-P8200/UC	CRT1639		
KEH-P8200RDS/EW, X1BEW	CRT1638		
KEH-P8250/ES	CRT1656		
KEH-P790/UC	CRT1654	EXK3110	CWM3952
KEH-P7250/ES	CRT1652		
KEH-P7200RDS/EW	CRT1653		
KEH-P7200/UC	CRT1654		
KEH-P7100RDS/EW	CRT1653		
KEH-P6200/UC	CRT1652		
KEH-P6200RDS/EW	CRT1653	EXK3105	CWM4212
KEH-P6100RDS/EW	CRT1653		
KEH-P590/UC	CRT1652	EXK3100	CWM3951
KEH-P5250/ES	CRT1652		
KEH-P5200/UC	CRT1652		
KEH-P25RDS/EW	CRT1653		
KEH-P15RDS/EW	CRT1653		

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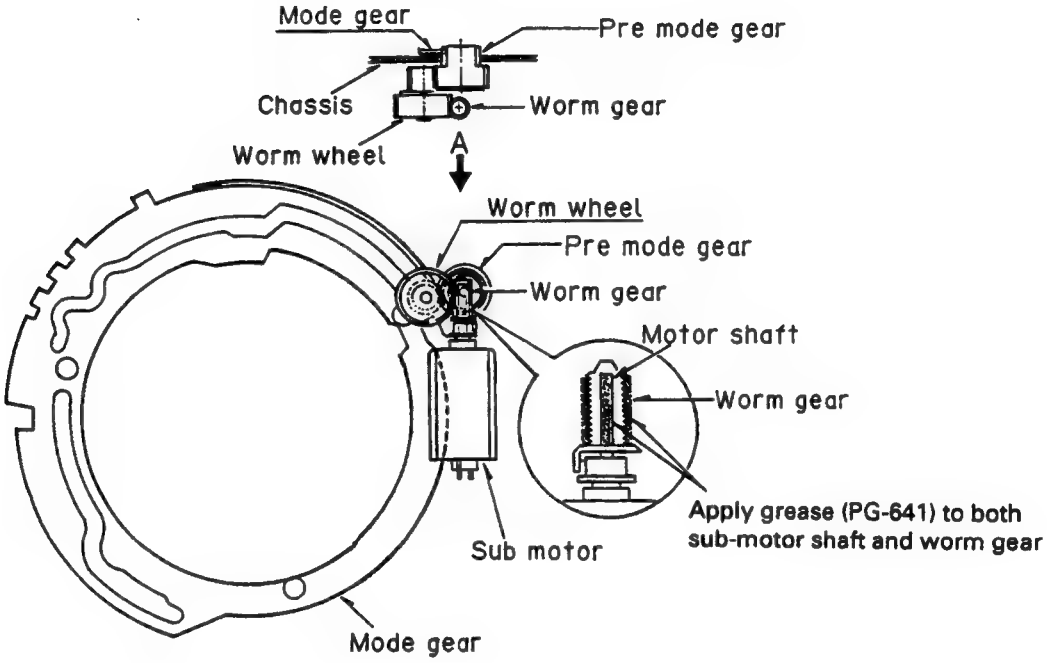
1. MECHANISM DESCRIPTION AND GREASING

1.1 DRIVE OPERATION

Inserting the cassette tape→Draw in→Put it down→Release←→Forward play←→REW←→FF←→Reverse play

Eject←Draw out←Lift←

All motive force(except the force for running a tape) is supplied by sub-motor.



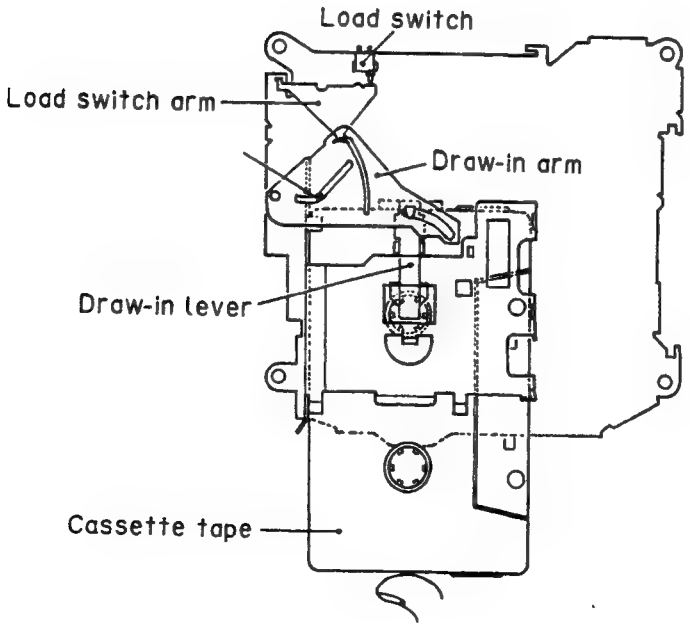


Fig.1

1.2 LOADING AND EJECT OPERATIONS

● **Loading the Cassette Tape**

1.Push the cassette tape by finger.

2.The draw-in lever is pushed by the cassette tape. And the load switch is turned on by way of the draw-in arm and of the load switch arm.

3.The sub-motor starts running.

4.The mode gear turns in direction (1).

5.The put-down driving lever moves in direction (2).

6.Move the put-down lever operation shaft in direction (3) and turn the draw-in arm in direction (4).

7.The cassette tape is loaded.

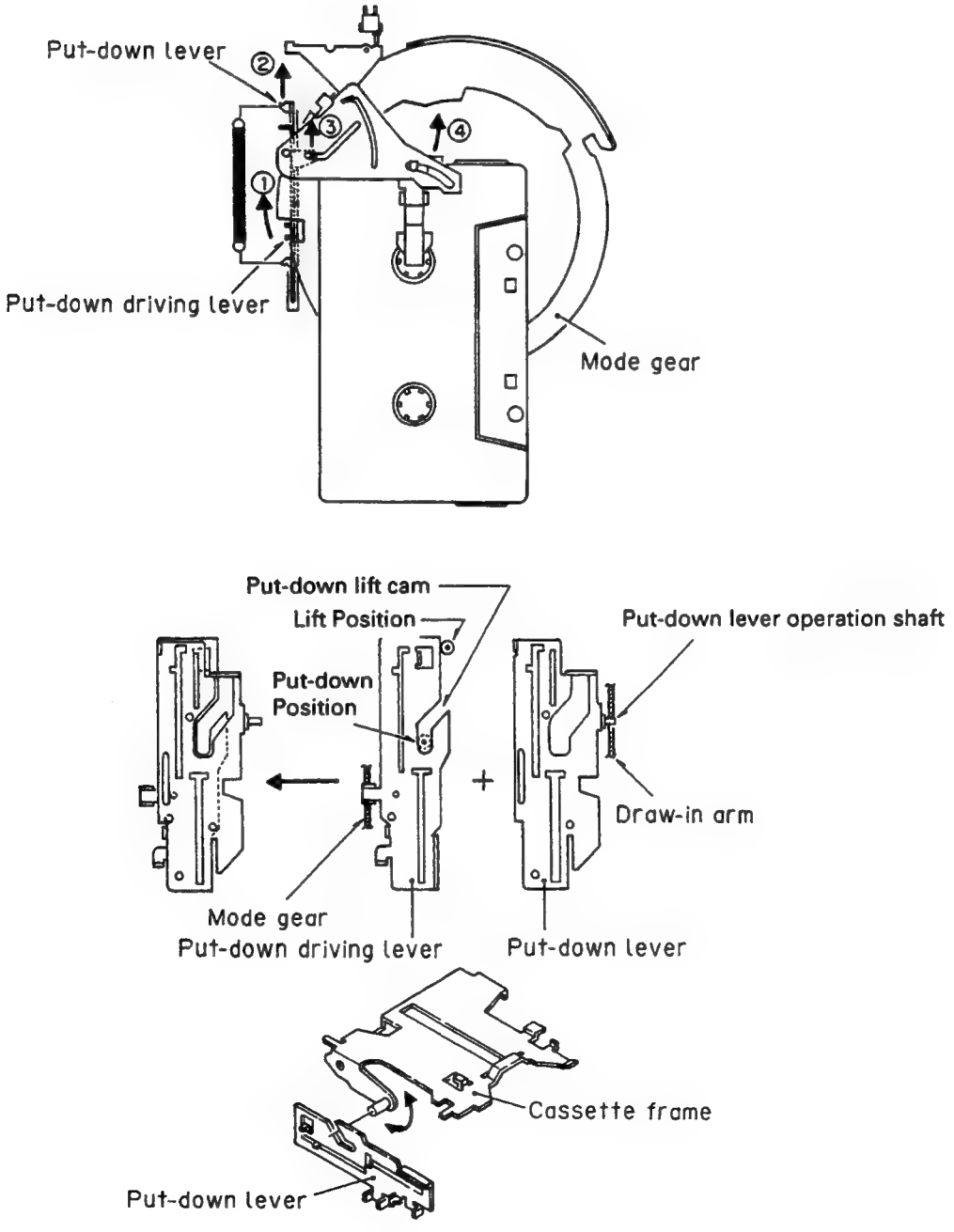


Fig.2

● **Ejecting the Cassette Tape**

1.The sub-motor starts running in the direction opposite to that in loading.
2.The mode gear turns in direction (5).
3.The put-down driving lever moves in direction (6).
4.Move the put-down lever operation shaft in direction (7) and turn the draw-in arm in direction (8).
5.Pull the load switch arm toward you and turn off the load switch.
6.The sub-motor stops.
7.The cassette tape is ejected.

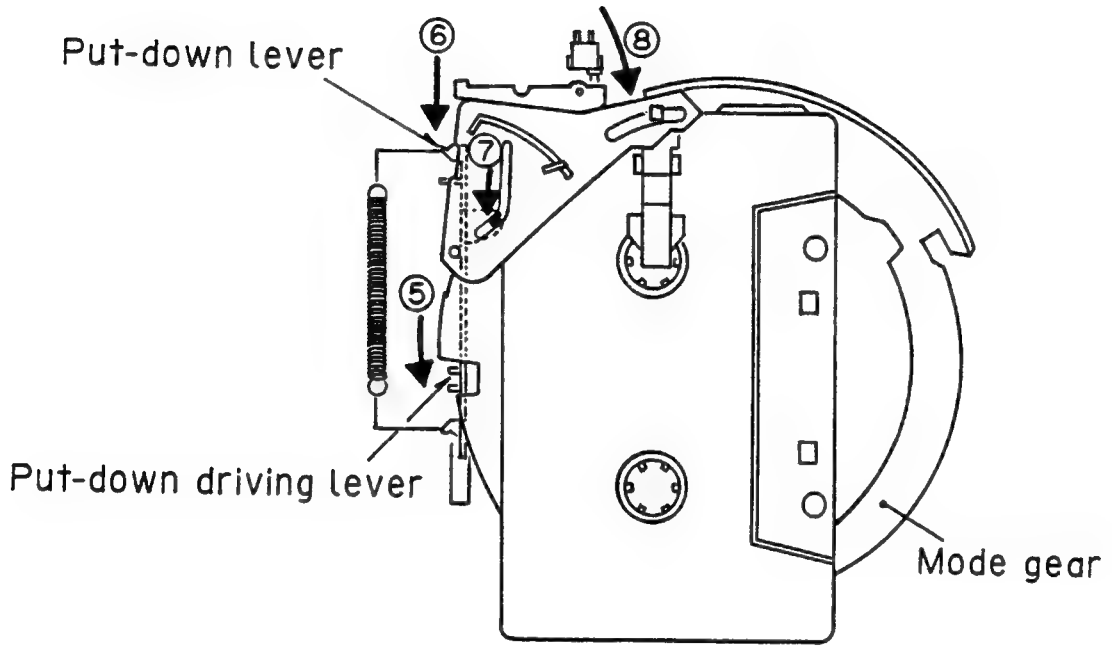


Fig.3

1.3 MODE CHANGEOVER

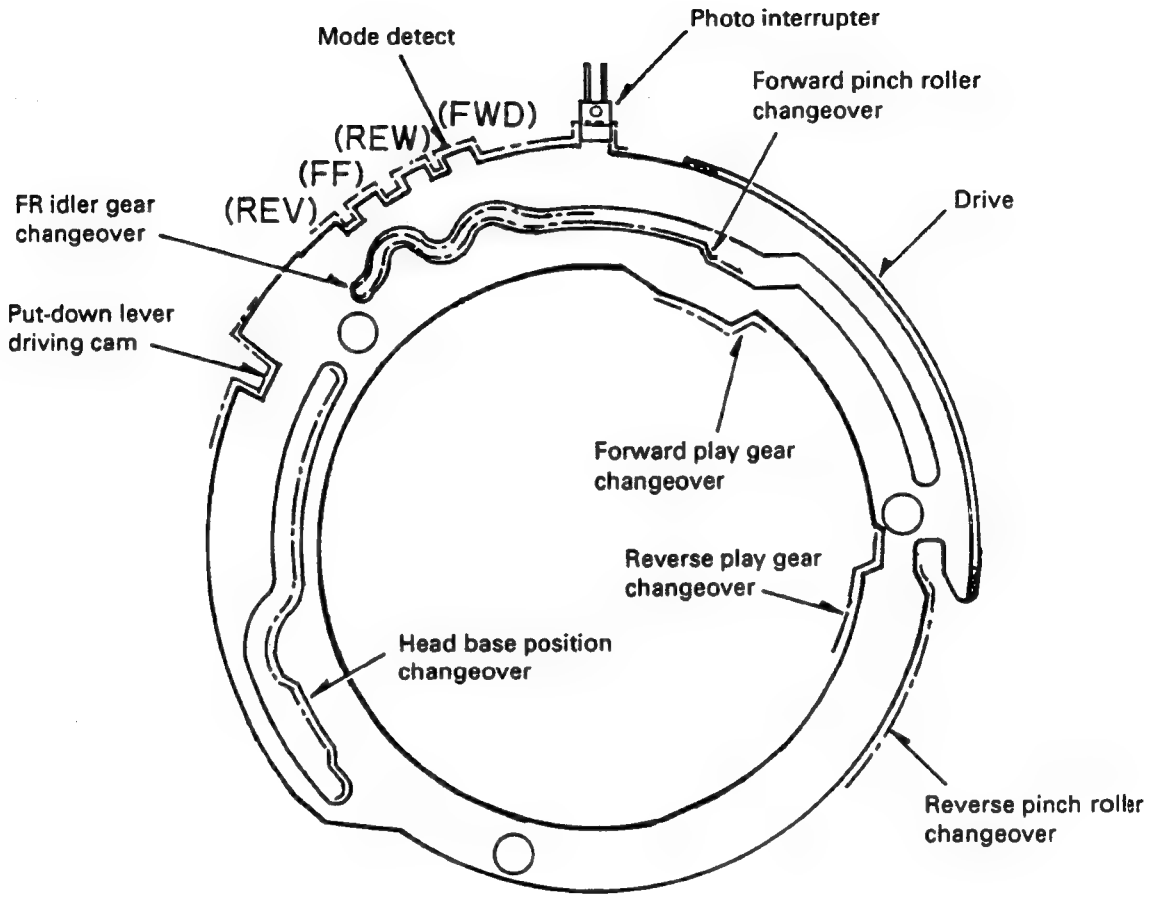


Fig.4

The mode gear is rotated by rotation of the pre mode gear which is driven by the sub-motor. The modes are in series in the order of "release"←→"forward play"←→"REW"←→"FF"←→"reverse play". The rotation of the mode gear makes changeover of the head position, press contact between the pinch rollers(forward, reverse), the rewinding reel rotation, etc.

The actions to be performed in the separate mode are show in Fig.5 through 9.

● **Release**

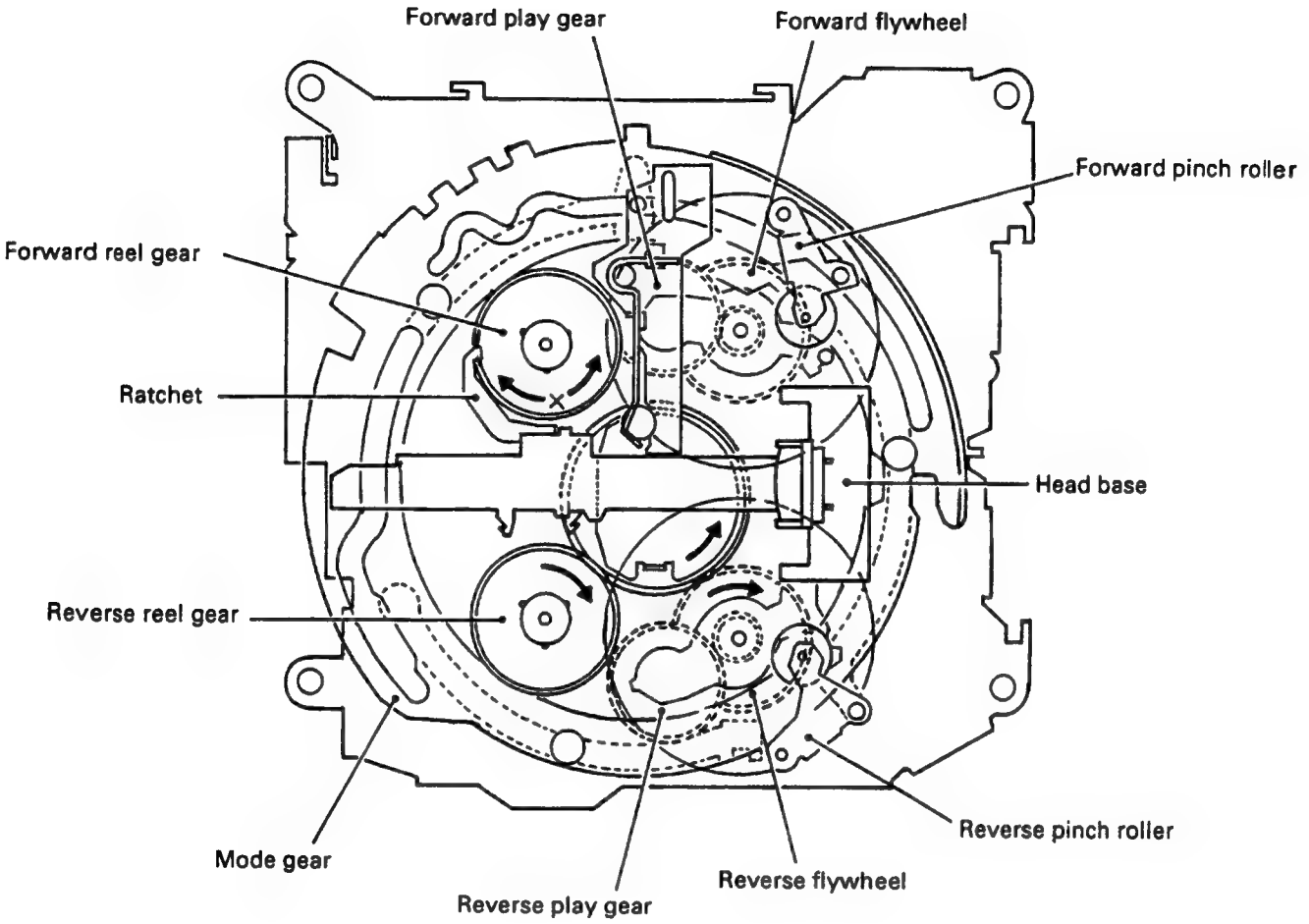


Fig.5

● **Forward Play**

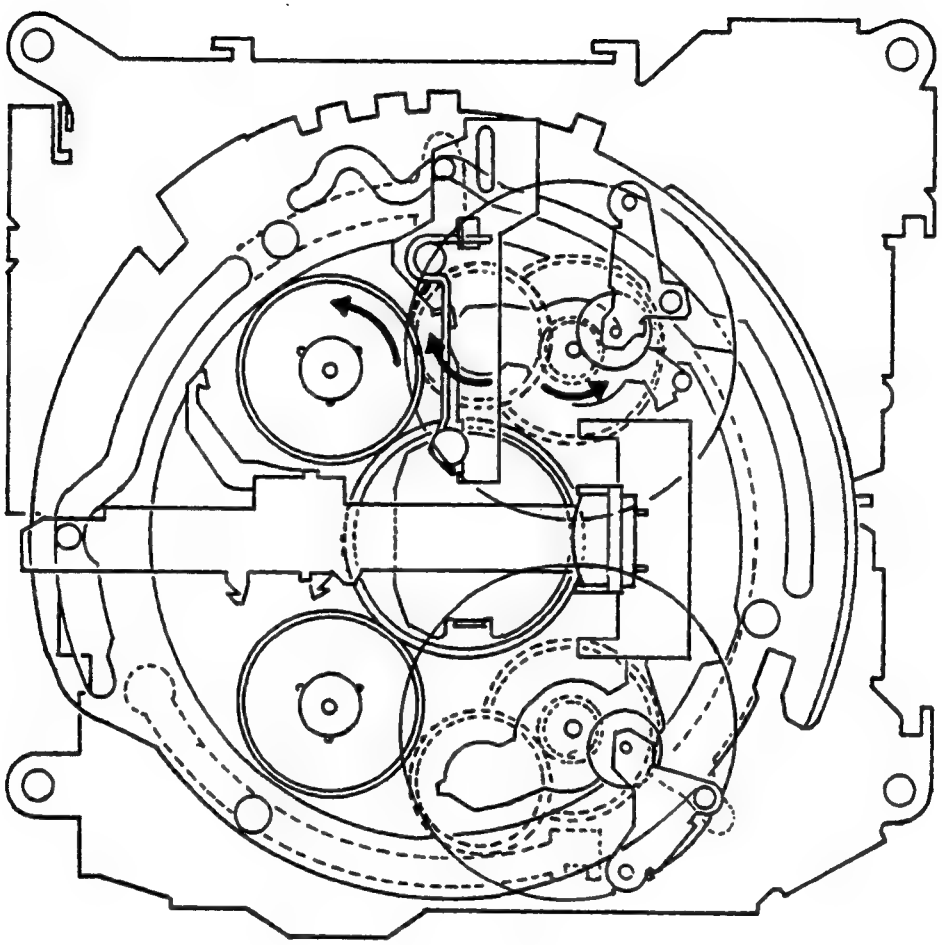


Fig.6

● REW

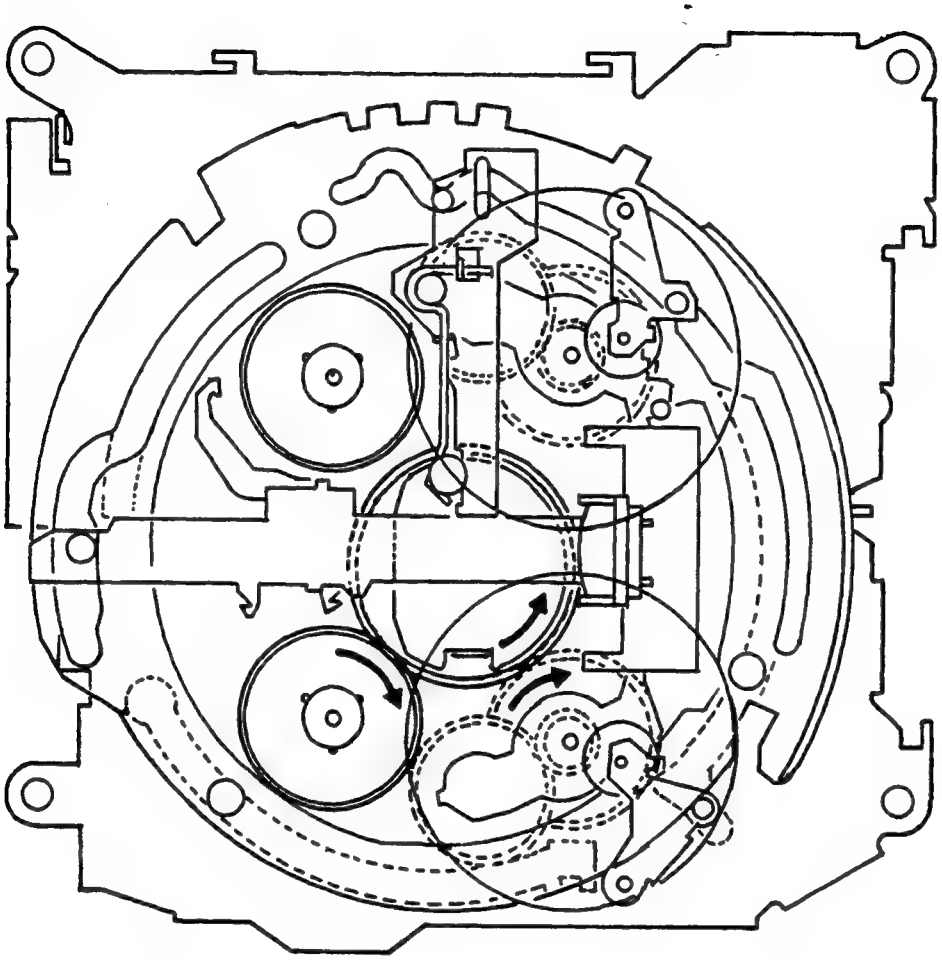


Fig.7

● FF

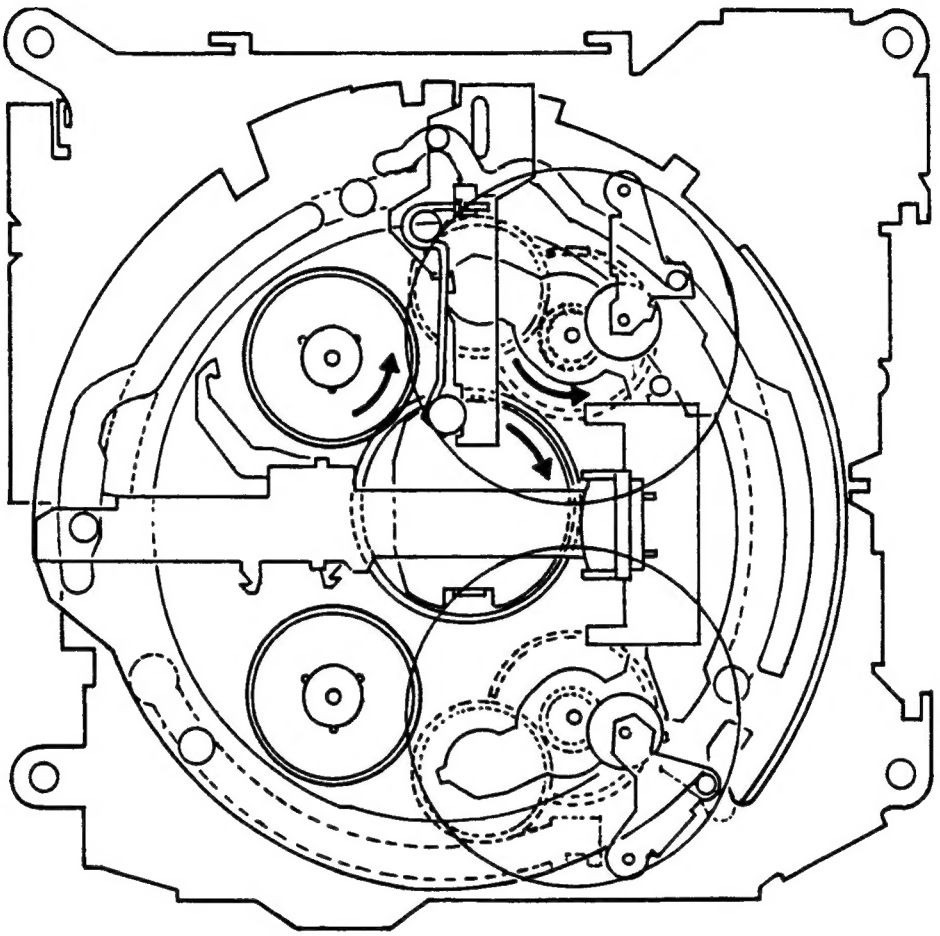


Fig.8

● **Reverse Play**

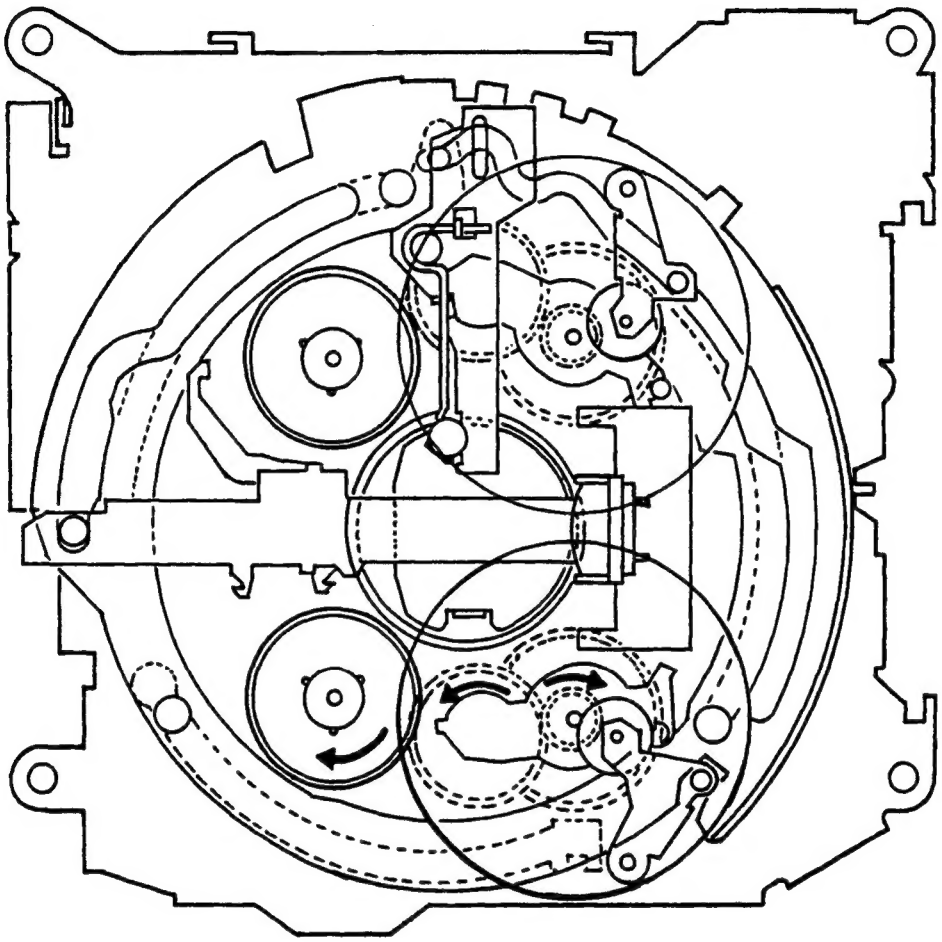


Fig. 9

2. DISASSEMBLY

● How to Remove the Cassette Holder

1.Remove the washer and two arms.
2.Remove the two screws, and then remove the guide assy.
3.Straighten the frame unit pawl, and remove both holder and frame unit.

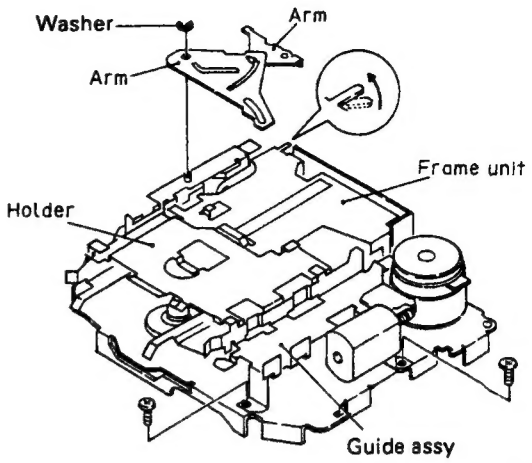


Fig.10

● How to Remove the Reel Unit

1.Remove the washer.
2.Push the arm in the arrow-marked direction and remove the reel assembly.

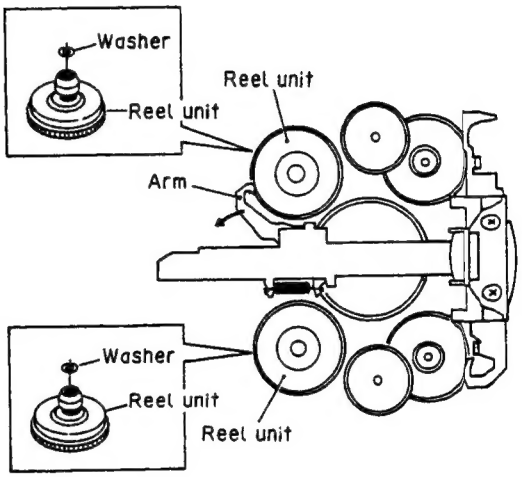


Fig.11

3. ADJUSTMENT

3.1 TAPE SPEED ADJUSTMENT

● To Adjust

Reproduce NCT-111 (3kHz, -10dB). Adjust the semi-fixed resistor so that frequency counter shows 3015Hz(+75Hz, –45Hz).

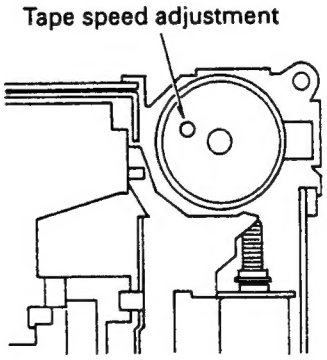


Fig.12

3.2 CHECK POINTS OF CASSETTE MECHANISM

Confirm the following items when replacing parts of the cassette mechanism .	■ Tape speed deviation: 3,000Hz +90Hz, –30Hz (4.76cm/s +3%, –1%) Using an NCT-111, measure the speed at the start and end of winding and take the maximum values.If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5–6 seconds.	■ Wow and flutter: Less than 0.15%(WRMS) Using the NCT-111, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer very considerably, adjust to 70 % of the minimum and maximum values. Measuring time shall be 5–6 seconds.
■ Fast forward and rewinding time: 100–120 seconds Using a C-60, set to fast forward and rewind, and measure the time with a stop watch.	■ Winding torque: 45–70 g·cm Using a cassette type torque meter (100 g·cm), measure the minimum value while in the play mode. Measuring time shall be 2.5–6 seconds.	■ F.F. torque: More than 50 g·cm Using a cassette type torque meter (130 g·cm), measure the value when the tape stops in the F.F. mode.
■ REW torque: More than 50 g·cm Using a cassette type torque meter (130 g·cm), measure the value when the tape stops in the REW mode.	■ Back tension torque: 1.5–5.5 g·cm After setting the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.	